SONY

3-859-040-11 (1)

Video Cassette Recorder

Operating Instructions

Owner's record

The model and serial numbers are located at the rear of the unit. Record these numbers in the spaces provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. _____

Serial No. _____

VHS

Hi-Fi

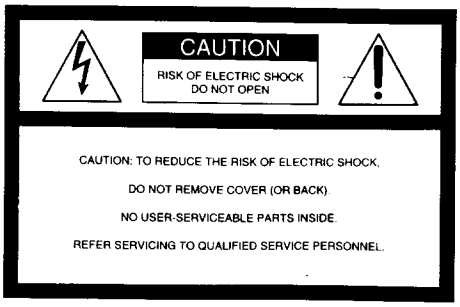
VCR Plus+

SLV-685HF

©1996 by Sony Corporation

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION

To prevent electric shock, do not use this polarized AC plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

Precautions

Safety

- Operate the unit only on 120 V AC, 60 Hz.
- If anything falls into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- One blade of the plug is wider than the other for the purpose of safety and will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, contact your Sony dealer.
- Unplug the unit from the wall outlet if you do not intend to use it for an extended period of time. To disconnect the cord, pull it out by the plug, never by the cord.

Installing

- Allow adequate air circulation to prevent internal heat buildup.
- Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation slots.
- Do not install the unit near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Do not install the unit in an inclined position. It is designed to be operated in a horizontal position only.
- Keep the unit and cassettes away from equipment with strong magnets, such as microwave ovens or large loudspeakers.
- Do not place heavy objects on the unit.
- If the unit is brought directly from a cold to a warm location, moisture may condense inside the VCR and cause damage to the video head and tape. When you first install the unit, or when you move it from a cold to a warm location, wait for about one hour before operating the unit.

Information

For customers in the USA

CAUTION

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution

Television programs, films, video tapes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws. Also, use of this recorder with cable television transmission may require authorization from the cable television transmission and/or program owner.

Table of contents

Getting Started

4 Step 1: Unpacking
5 Step 2: Setting up the remote commander
7 Step 3: Hookups
28 Selecting a language
29 Setting the clock
30 Setting up cable box control
35 Presetting channels
39 Setting up VCR Plus+*

Getting Started

Basic Operations

42 Playing a tape
44 Recording TV programs
47 Recording TV programs using VCR Plus+
50 Setting the timer manually

Additional Operations

52 Playing / searching at various speeds
53 Recording TV programs using the quick timer
54 Checking / changing / canceling timer settings
55 Recording stereo and bilingual programs
57 Adjusting the picture
58 Changing menu options
59 Editing with another VCR

Additional Information

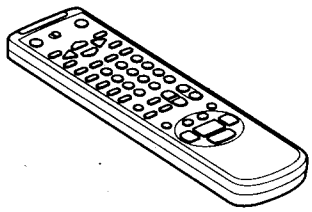
61 General setup information
63 Troubleshooting
65 Specifications
66 Index to parts and controls
69 Index
back cover
Quick reference to using the VCR

* VCR Plus+ and PlusCode are trademarks of Gemstar Development Corporation. VCR Plus+ system is manufactured under license from Gemstar Development Corporation.

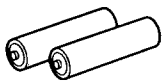
Step 1
Unpacking

Check that you have received the following items with the VCR:

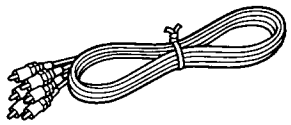
- Remote commander



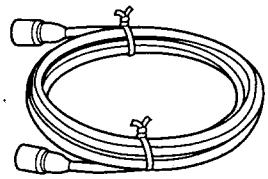
- Size AA (R6) batteries



- Audio/video cable (3-phono to 3-phono)



- 75-ohm coaxial cable with F-type connectors

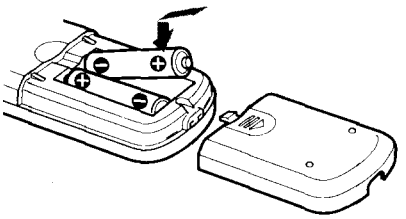


Step 2

Setting up the remote commander

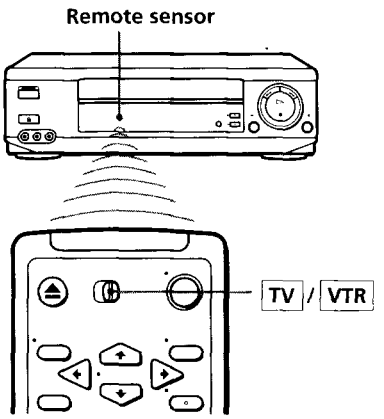
Inserting the batteries

Insert two size AA (R6) batteries by matching the + and – on the batteries to the diagram inside the battery compartment.



Using the remote commander

You can use this remote commander to operate this VCR and a Sony TV. Buttons on the remote commander marked with a dot (•) can be used to operate your Sony TV.



To operate	Set TV / VTR to
the VCR	VTR and point at the remote sensor on the VCR
a Sony TV	TV and point at the remote sensor on the TV

Notes

- With normal use, the batteries should last about three to six months.
- If you do not use the remote commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not use a new battery with an old one.
- Do not use different types of batteries.

continued

Controlling other TVs with the remote commander

The remote commander is preprogrammed to control non-Sony TVs. If your TV is listed in the table below, set the appropriate manufacturer's code number.

1 Set TV/VTR at the top of the remote commander to TV.

2 Hold down POWER, and enter your TV's code number(s) using the number buttons. Then release POWER.

Now you can use the POWER, VOL +/–, CH +/– and TV/VTR buttons to control your TV. You can also use the buttons marked with a dot (•) to control a Sony TV. To control the VCR, reset TV/VTR to VTR.

Code numbers of controllable TVs

If more than one code number is listed, try entering them one at a time until you find the one that works with your TV.

Manufacturer	Code number
Sony	01
Akai	04
AOC	04
Centurion	12
Coronado	03
Curis-Mathes	12
Daytron	12
Emerson	03,04,14
Fisher	11
General Electric	06,10
Gold Star	03,04,17
Hitachi	02,03
J.C.Penny	04,12

Manufacturer	Code number
JVC	09
KMC	03
Magnavox	03,08,12
Marantz	04,13
MGA/Mitsubishi	04,12,13,17
NEC	04,12
Panasonic	06,19
Philco	03,04
Philips	08
Pioneer	16
Portland	03
Quasar	06,18
Radio Shack	05,14

Manufacturer	Code number
RCA	04,10
Sampo	12
Sanyo	11
Scott	12
Sears	07,10,11
Sharp	03,05,18
Sylvania	08,12
Teknika	03,08,14
Toshiba	07
Wards	03,04,12
Yorx	12
Zenith	15

Notes

- If the TV uses a different remote control system from the one programmed to work with the VCR, you cannot control your TV with the remote commander.
- If you enter a new code number, the code number previously entered will be erased.
- When you replace the batteries of the remote commander, the code number automatically resets to 01 (Sony). Reset the appropriate code number.

Step 3

Hookups

Selecting the best hookup option

There are many ways in which your VCR can be hooked up. To hook up your VCR so that it works best for you, first scan through the table below. Then use the accompanying diagrams and procedures on the following pages to set up your VCR. For hookup 1 or 5, use the Sony RM-CM101 Cable Mouse (cable box controller) (not supplied).

If you have	Use	Refer to
TV that has audio/video inputs	**Audio/video (A/V) hookup,** then follow one of the hookups below.	**Pages 8 and 9**
Cable box that is compatible with the VCR's cable box control feature	**Hookup 1**	**Pages 10 to 12**
No cable box or incompatible cable box with only a few scrambled channels	**Hookup 2**	**Pages 13 to 15**
Antenna only, no cable TV	**Hookup 3**	**Pages 16 to 18**
Incompatible cable box with many scrambled channels	**Hookup 4**	**Pages 19 to 21**
DSS®* receiver	**Hookup 5**	**Pages 22 and 23**
Incompatible cable box with only a few scrambled channels, using an A/B switch	**Hookup 6**	**Pages 24 to 27**

After you've completed the connections, follow the instructions for setup. During setup, if you need more details on the procedure described, page numbers are provided where you can find complete, step-by-step instructions.

After you've completed the setup, you're ready to use your VCR. Procedures differ depending on the hookup you used. For an overview, refer to "Quick reference to using the VCR" on the back cover.

Before you get started

- Turn off the power to all equipment.
- Do not connect the AC power cords until all of the connections are completed.
- Be sure you make connections firmly. Loose connections may cause picture distortion.
- If your TV doesn't match any of the examples provided, see your nearest Sony dealer or qualified technician.

* DSS® is a registered trademark of DIRECTV, Inc., a unit of Hughes Electronics Corporation.

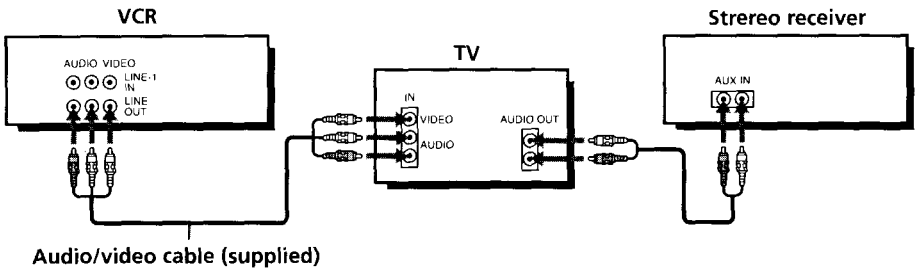
Audio/video (A/V) hookup

Pages 8 and 9

If your TV has audio/video (A/V) input jacks, you will get a better picture and sound if you hook up your VCR using these connections. In addition, for a true "home theater" experience, you should connect the audio outputs of your VCR or TV to your stereo system. If your TV doesn't have A/V inputs, see the following pages for antenna or cable hookups.

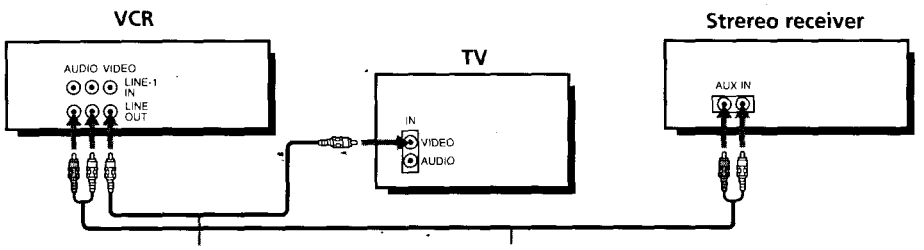
If you're not planning to use your VCR to record programs, you're finished setting up the VCR after you've made the connections shown on this page. If you want to record off-air or off your cable TV system, complete these connections first, and then go to the following pages for antenna or cable hookups.

A Use this hookup if your TV has stereo jacks



Audio/video cable (supplied)

B Use this hookup if your TV doesn't have stereo jacks



Video cable (not supplied) Audio cable (not supplied)

Note

To play a tape in stereo, you must use the A/V connection.

Caution

Connections between the VCR's VHF/UHF connector and the antenna terminals of the TV receiver should be made only as shown in the following instructions. Failure to do so may result in operation that violates the regulations of the Federal Communications Commission regarding the use and operation of RF devices. Never connect the output of the VCR to an antenna or make simultaneous (parallel) antenna and VCR connections at the antenna terminals of your receiver.

Note to CATV system installer (in USA)

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Hookup 1

Pages 10 to 12

Using cable box control

Recommended use

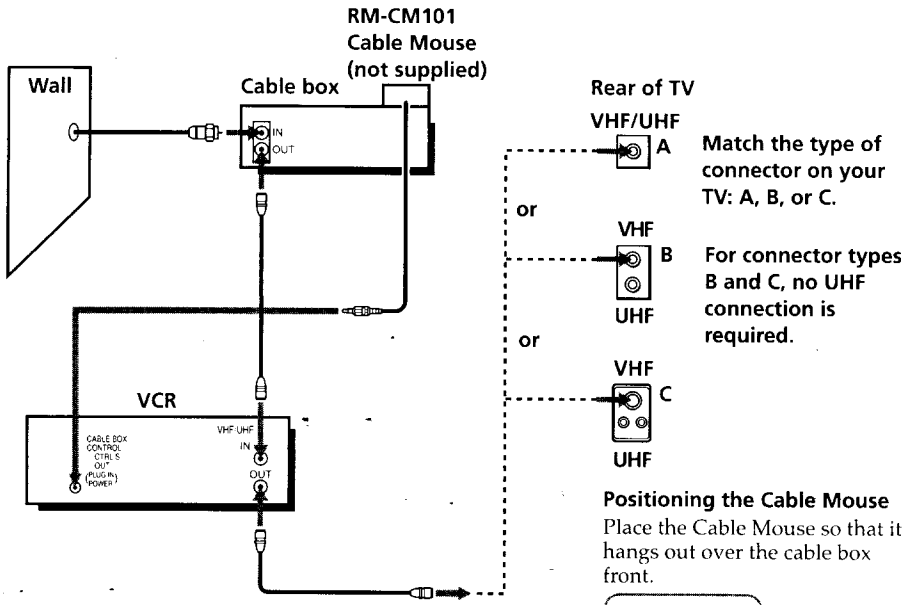
You should use this hookup if you have a cable box, especially if your cable system scrambles all or most channels. This hookup allows the VCR's cable box control feature to control the channel on the cable box, simplifying the recording process. A list of compatible cable boxes is on page 31.

What you can do with this hookup

- Record any channel using the VCR's cable box control feature to select channels on the cable box

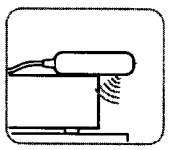
What you can't do

- Record with the cable box turned off
- Record one channel while watching another channel



Positioning the Cable Mouse

Place the Cable Mouse so that it hangs out over the cable box front.

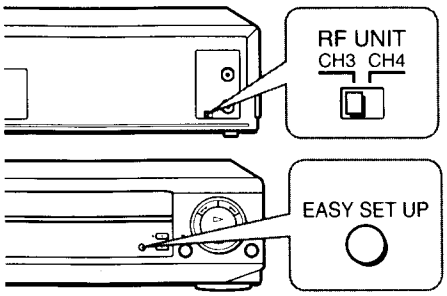


Side view

Hookup 1: VCR setup

1 Set the RF UNIT switch to CH 3 or CH 4, whichever channel is not used in your area. If both are used, set the switch to either channel.

For details, see page 61. If you made A/V connections (from page 8), you can skip this step.



2 Turn on your cable box.

3 Press EASY SET UP on the VCR.

❶ The LANGUAGE menu appears. Change the on-screen display language to Spanish (ESPAÑOL) or French (FRANÇAIS) if desired, and press EXECUTE. For details, see page 28.

```
SET UP
LANGUAGE

▶ENGLISH
  ESPAÑOL
  FRANÇAIS

NEXT    : EXECUTE
CANCEL  : EASY SET UP
```

❷ The CLOCK SET menu appears. Set the clock and press EXECUTE. For details, see page 29.

```
SET UP
CLOCK SET

 1/1/1997 WE 12:00AM

NEXT    : EXECUTE
CANCEL  : EASY SET UP
```

❸ The CABLE BOX CONTROL menu appears. Select ON. For details, see page 30.

```
SET UP
CABLE BOX CONTROL
▶CABLE MOUSE      •ON   OFF
  BOX CODE NO.      ---
  BOX OUTPUT CH     CH3

SELECT  : ◀/▶
CANCEL  : EASY SET UP
```

❹ Enter your cable box code number and press CURSOR ↓.

```
SET UP
CABLE BOX CONTROL
  CABLE MOUSE      •ON   OFF
▶BOX CODE NO.       ---
  BOX OUTPUT CH     CH3

ENTER YOUR CABLE BOX
CODE NO. USING 0–9 KEYS
REFER TO THE OPERATING
MANUAL FOR THE CODE
```

❺ Select your cable box output channel and press EXECUTE.

```
SET UP
CABLE BOX CONTROL
  CABLE MOUSE      •ON   OFF
  BOX CODE NO.      0~9
▶BOX OUTPUT CH      CH3

USE ◀/▶ TO SELECT CABLE
BOX CH. THEN PUSH EXECUTE
```

→

```
SET UP

  SET UP IS DONE
```

↓

Normal display

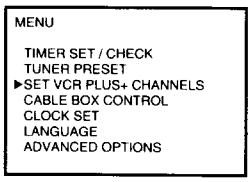
continued

Hookup 1: VCR Plus+ channel setup

1 Find the VCR Plus+ Channel Listing in your program guide. For details, see page 39.

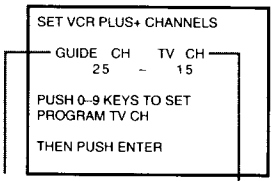
2 If the channels in the program guide are different from the channels that you actually use on your TV, set the channels that are different as follows. For details, see page 40.

❶ Press MENU and select SET VCR PLUS+ CHANNELS.



❷ Enter the program guide channel, then the channel you use on your TV.

❸ Press EXECUTE.



Program guide channel

Your actual TV channel

No cable box, or incompatible cable box with only a few scrambled channels

Recommended use

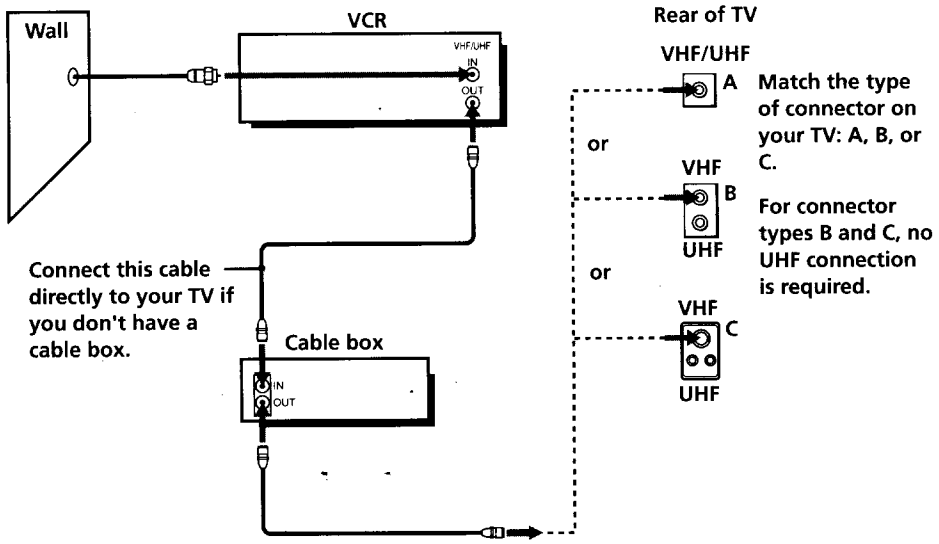
Use this hookup if you do not have a cable box. Also use this hookup if your cable company cannot supply a cable box that is compatible with the VCR's cable box control feature, and your cable system scrambles only a few channels.

What you can do with this hookup

- Record any unscrambled channel by selecting the channel on the VCR

What you can't do

- Record scrambled channels that require a cable box

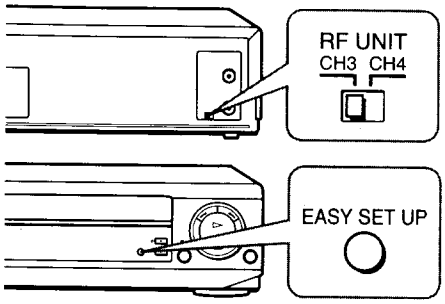


continued

Hookup 2: VCR setup

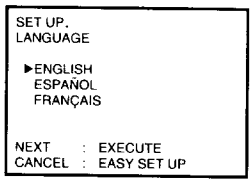
1 Set the RF UNIT switch to CH 3 or CH 4, whichever channel is not used in your area. If both are used, set the switch to either channel.

For details, see page 61. If you made A/V connections (from page 8), you can skip this step.

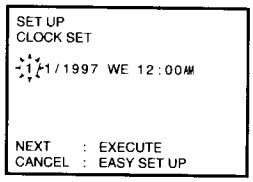


2 Press EASY SET UP on the VCR.

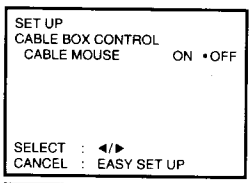
❶ The LANGUAGE menu appears. Change the on-screen display language to Spanish (ESPAÑOL) or French (FRANÇAIS) if desired, and press EXECUTE. For details, see page 28.



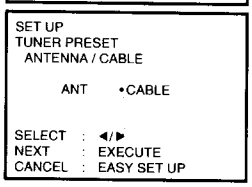
❷ The CLOCK SET menu appears. Set the clock and press EXECUTE. For details, see page 29.



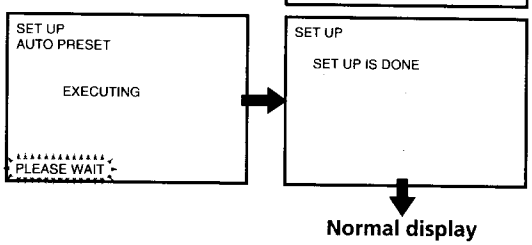
❸ The CABLE BOX CONTROL menu appears. Select OFF and press EXECUTE. For details, see page 30.



❹ The TUNER PRESET menu appears. Set ANTENNA / CABLE to CABLE and press EXECUTE. For details, see page 35.



❺ The AUTO PRESET starts.

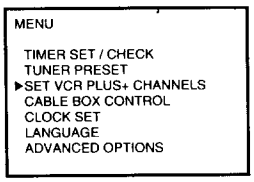


Hookup 2: VCR Plus+ channel setup

1 Find the VCR Plus+ Channel Listing in your program guide. For details, see page 39.

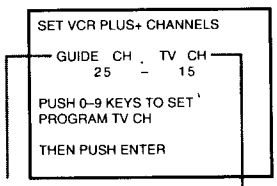
2 If the channels in the program guide are different from the channels that you actually use on your TV, set the channels that are different as follows. For details, see page 40.

❶ Press MENU and select SET VCR PLUS+ CHANNELS.



❷ Enter the program guide channel, then the channel you use on your TV.

❸ Press EXECUTE.



Program guide channel

Your actual TV channel

Hookup 3

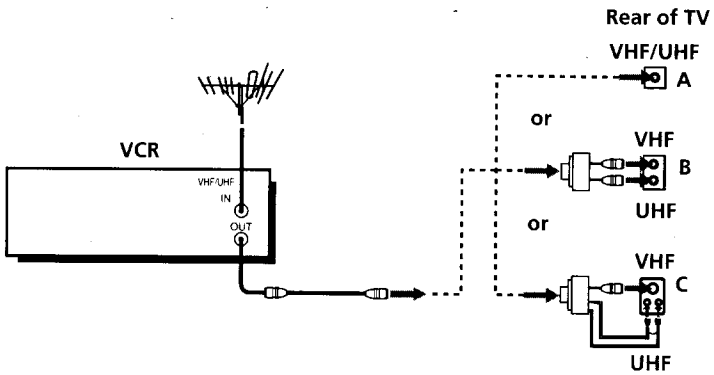
Pages 16 to 18

Antenna hookup

Make the following connections if you're using an antenna (if you don't have cable TV).

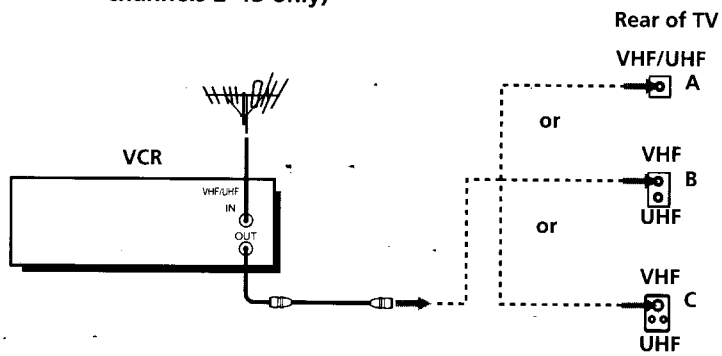
A Use this hookup if you're using:

- VHF/UHF antenna (you get channels 2–13 and channels 14 and higher)
- UHF-only antenna (you get channels 14 and higher)
- Separate VHF and UHF antennas



Match the type of connector on your TV: A, B, or C.

B Use this hookup if you're using a VHF-only antenna (you get channels 2–13 only)



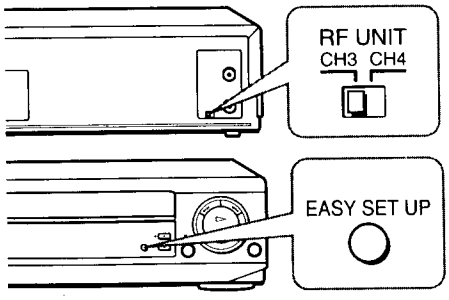
Match the type of connector on your TV: A, B, or C.

For connector types B and C, no UHF connection is required.

If you cannot connect your antenna cable to the VCR directly

If your antenna cable is a flat cable (300-ohm twin lead cable), attach an external antenna connector (not supplied) so that you can connect the cable to the VHF/UHF IN connector. If you have separate cables for VHF and UHF antennas, you should use a U/V band mixer (not supplied). For details, see page 62.

Hookup 3: VCR setup

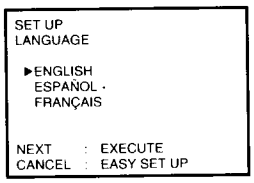


1 Set the RF UNIT switch to CH 3 or CH 4, whichever channel is not used in your area. If both are used, set the switch to either channel.

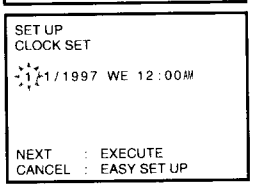
For details, see page 61. If you made A/V connections (from page 8), you can skip this step.

2 Press EASY SET UP on the VCR.

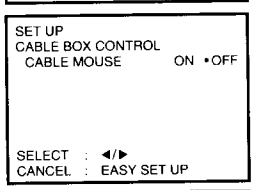
❶ The LANGUAGE menu appears: Change the on-screen display language to Spanish (ESPAÑOL) or French (FRANÇAIS) if desired, and press EXECUTE. For details, see page 28 .



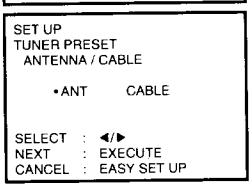
❷ The CLOCK SET menu appears. Set the clock and press EXECUTE. For details, see page 29.



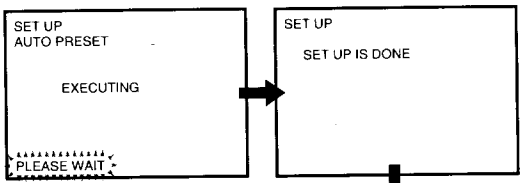
❸ The CABLE BOX CONTROL menu appears. Select OFF and press EXECUTE. For details, see page 30.



❹ The TUNER PRESET menu appears. Set ANTENNA/CABLE to ANT and press EXECUTE. For details, see page 35.



❺ The AUTO PRESET starts.



Normal display

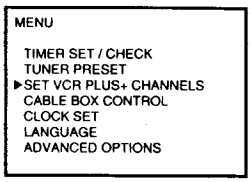
continued

Hookup 3: VCR Plus+ channel setup

1 Find the VCR Plus+ Channel Listing in your program guide. For details, see page 39.

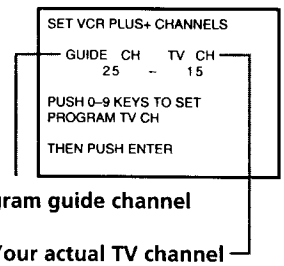
2 If the channels in the program guide are different from the channels that you actually use on your TV, set the channels that are different as follows. For details, see page 40.

❶ Press MENU and select SET VCR PLUS+ CHANNELS.



❷ Enter the program guide channel, then the channel you use on your TV.

❸ Press EXECUTE.



Program guide channel

Your actual TV channel

Incompatible cable box with many scrambled channels

Recommended use

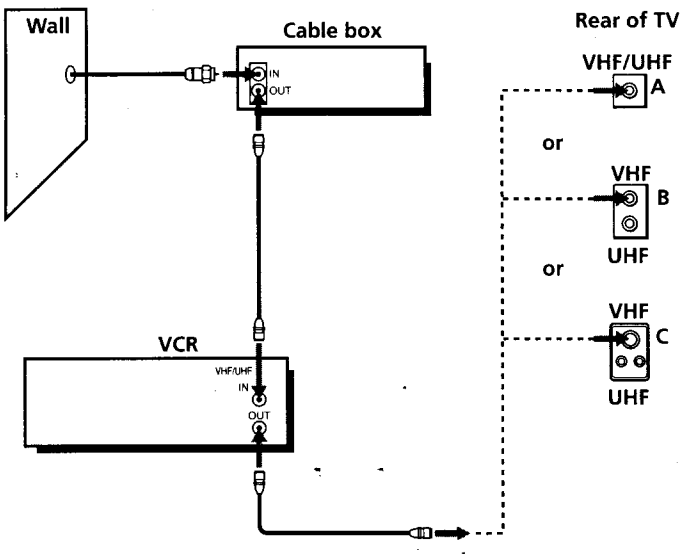
Use this hookup if your cable company cannot supply a cable box that is compatible with the VCR's cable box control feature, and your cable system scrambles all or most channels.

What you can do with this hookup

- Record any channel by selecting the channel on the cable box

What you can't do

- Record with the cable box turned off
- Record one channel while watching another channel
- Select channels directly on the VCR

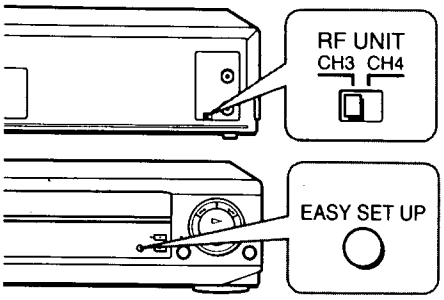


Match the type of connector on your TV: A, B, or C.

For connector types B and C, no UHF connection is required.

continued

Hookup 4: VCR setup



1 Set the RF UNIT switch to CH 3 or CH 4, whichever channel is not used in your area. If both are used, set the switch to either channel.

For details, see page 61. If you made A/V connections (from page 8), you can skip this step.

2 Turn on your cable box.

3 Press EASY SET UP on the VCR.

❶ The LANGUAGE menu appears. Change the on-screen display language to Spanish (ESPAÑOL) or French (FRANÇAIS) if desired, and press EXECUTE. For details, see page 28.

```
SET UP
LANGUAGE

▶ENGLISH
  ESPAÑOL
  FRANÇAIS

NEXT    : EXECUTE
CANCEL  : EASY SET UP
```

❷ The CLOCK SET menu appears. Set the clock and press EXECUTE. For details, see page 29.

```
SET UP
CLOCK SET

 1 1/1997 WE 12:00AM

NEXT    : EXECUTE
CANCEL  : EASY SET UP
```

❸ The CABLE BOX CONTROL menu appears. Select OFF and press EXECUTE. For details, see page 30.

```
SET UP
CABLE BOX CONTROL
 CABLE MOUSE        ON ‹OFF

SELECT  : ◀/▶
CANCEL  : EASY SET UP
```

❹ The TUNER PRESET menu appears. Set ANTENNA/CABLE to ANT and press EXECUTE. For details, see page 35.

```
SET UP
TUNER PRESET
 ANTENNA / CABLE

   •ANT    CABLE

SELECT  : ◀/▶
NEXT    : EXECUTE
CANCEL  : EASY SET UP
```

❺ The AUTO PRESET starts.

```
SET UP
AUTO PRESET

     EXECUTING

  PLEASE WAIT
```

→

```
SET UP

  SET UP IS DONE
```

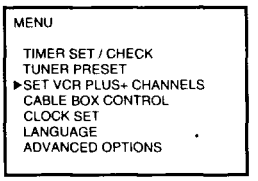
↓ **Normal display**

Hookup 4: VCR Plus+ channel setup

1 Find the VCR Plus+ Channel Listing in your program guide. For details, see page 39.

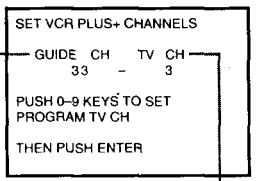
2 Enter all the channels you want to record and the cable box output channel (usually 2, 3, or 4). For details, see page 40.

❶ Press MENU and select SET VCR PLUS+ CHANNELS.



❷ Enter the program guide channel, then the cable box output channel.

❸ Press EXECUTE.



Program guide channel

Cable box output channel

Hookup 5

Pages 22 and 23

DSS (Digital Satellite System) receiver

Recommended use

Use this hookup if you have a DSS receiver. It allows the VCR's cable box control feature to control the channel on the DSS receiver, simplifying the recording process. A list of compatible DSS receivers is on page 32.

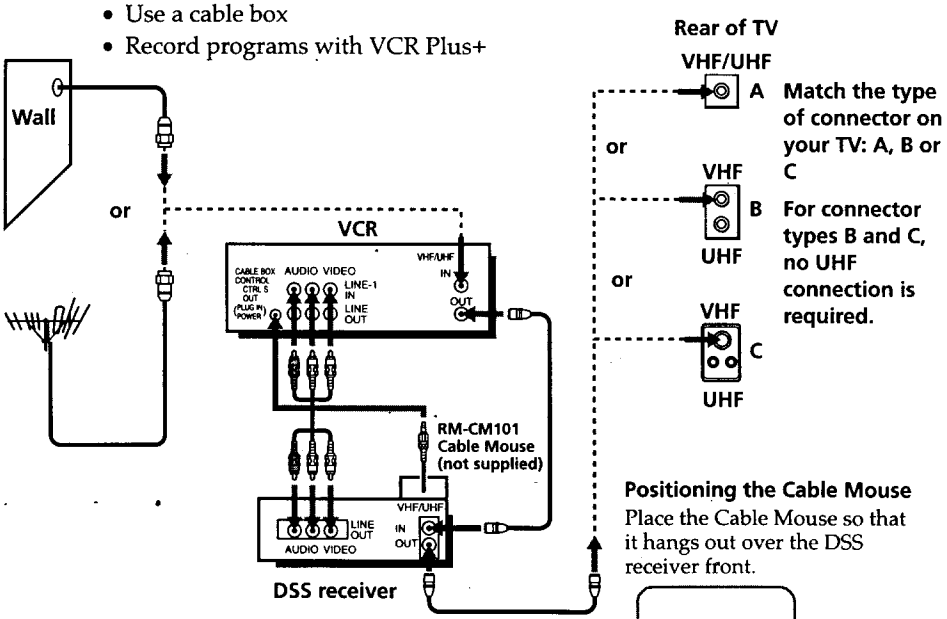
DSS (Digital Satellite System) is a satellite broadcast that provides superior digital-quality video and crisp digital-quality audio. A variety of program packages are available through your program providers. It also has program guides that are sorted by program categories.

What you can do with this hookup

- Record any channels using the VCR's cable box control feature to select channels on the DSS receiver.

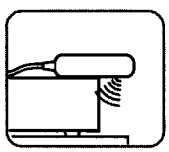
What you can't do

- Record with the DSS receiver turned off
- Record any channels from cable or an antenna
  (To record channels from cable or an antenna, turn off the cable box control feature.)
- Use a cable box
- Record programs with VCR Plus+



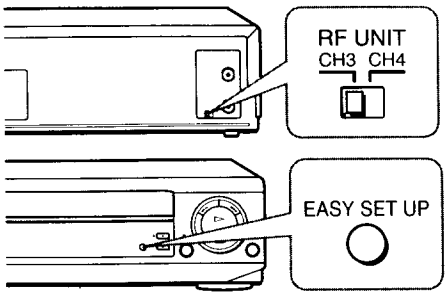
Positioning the Cable Mouse

Place the Cable Mouse so that it hangs out over the DSS receiver front.



Side view

Hookup 5: VCR setup



1 Set the RF UNIT switch to CH 3 or CH 4, whichever channel is not used in your area. If both are used, set the switch to either channel.

For details, see page 61. If you made A/V connections (from page 8), you can skip this step.

2 Turn on your DSS receiver.

3 Press EASY SET UP on the VCR.

❶ The LANGUAGE menu appears. Change the on-screen display language to Spanish (ESPAÑOL) or French (FRANÇAIS) if desired, and press EXECUTE. For details, see page 28.

```
SET UP
LANGUAGE

▶ENGLISH
  ESPAÑOL
  FRANÇAIS

NEXT    : EXECUTE
CANCEL  : EASY SET UP
```

❷ The CLOCK SET menu appears. Set the clock and press EXECUTE. For details, see page 29.

```
SET UP
CLOCK SET

 1 1/1997 WE 12:00AM

NEXT    : EXECUTE
CANCEL  : EASY SET UP
```

❸ The CABLE BOX CONTROL menu appears. Select ON. For details, see page 30.

```
SET UP
CABLE BOX CONTROL
▶CABLE MOUSE      •ON  OFF
  BOX CODE NO.    ---
  BOX OUTPUT CH   CH3

SELECT  : ◀/▶
CANCEL  : EASY SET UP
```

❹ Enter your DSS receiver code number and press CURSOR⬇. For details, see page 30.

```
SET UP
CABLE BOX CONTROL
  CABLE MOUSE     ON  OFF
▶BOX CODE NO.     ---
  BOX OUTPUT CH   CH3

ENTER YOUR CABLE BOX
CODE NO. USING 0-9 KEYS
REFER TO THE OPERATING
MANUAL FOR THE CODE
```

❺ Set your DSS receiver output channel (BOX OUTPUT CH) to LINE and press EXECUTE.

```
SET UP
CABLE BOX CONTROL
  CABLE MOUSE     •ON  OFF
  BOX CODE NO.    650
▶BOX OUTPUT CH    LINE

USE ◀/▶ TO SELECT CABLE
BOX CH. THEN PUSH EXECUTE
```

→

```
SET UP

SET UP IS DONE
```

⬇

Normal display

Hookup 6

Pages 24 to 27

Incompatible cable box with only a few scrambled channels, using an A/B switch

Recommended use

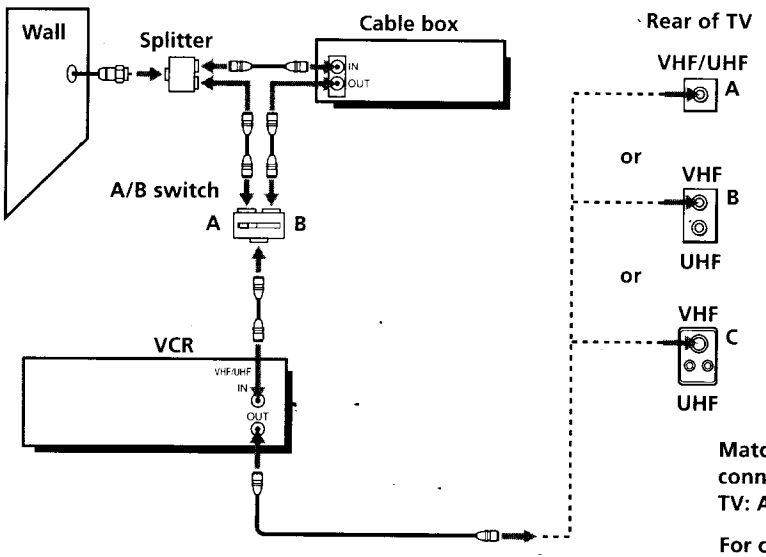
By using an A/B switch (not supplied), this hookup allows you to record both scrambled and unscrambled channels conveniently.

What you can do with this hookup

- Record any unscrambled channel by selecting the channel directly on the VCR (the A/B switch is set to A)
- Record any scrambled channel by selecting the channel on the cable box (the A/B switch is set to B)

What you can't do

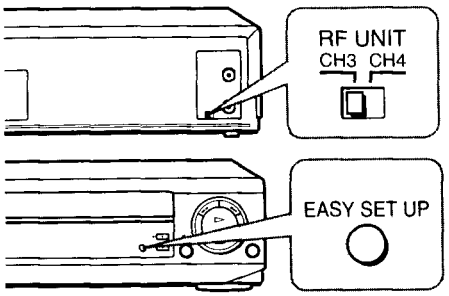
- Record one scrambled channel while watching another channel (the A/B switch is set to B)



Match the type of connector on your TV: A, B, or C.

For connector types B and C, no UHF connection is required.

Hookup 6: VCR setup



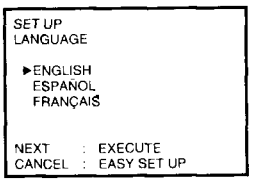
1 Set the RF UNIT switch to CH 3 or CH 4, whichever channel is not used in your area. If both are used, set the switch to either channel.

For details, see page 61. If you made A/V connections (from page 8), you can skip this step.

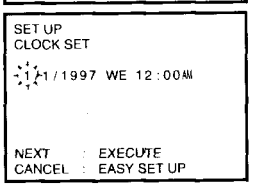
2 Set the A/B switch to "A."

3 Press EASY SET UP on the VCR.

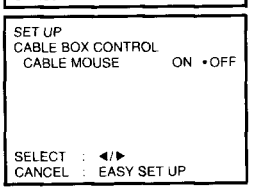
❶ The LANGUAGE menu appears. Change the on-screen display language to Spanish (ESPAÑOL) or French (FRANÇAIS) if desired, and press EXECUTE. For details, see page 28.



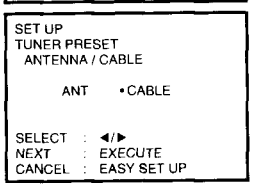
❷ The CLOCK SET menu appears. Set the clock and press EXECUTE. For details, see page 29.



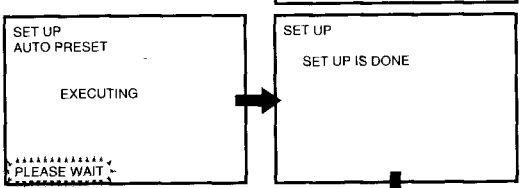
❸ The CABLE BOX CONTROL menu appears. Select OFF and press EXECUTE. For details, see page 30.



❹ The TUNER PRESET menu appears. Set ANTENNA/CABLE to CABLE and press EXECUTE. For details, see page 35.



❺ The AUTO PRESET starts.



Normal display

continued

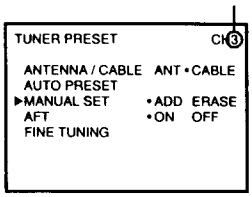
4 Preset the cable box output channel (usually 2, 3 or 4). For details, see page 37.

❶ Press MENU and select TUNER PRESET.

❷ Enter the cable box output channel.

❸ Set MANUAL SET to ADD and press EXECUTE.

Cable box output channel

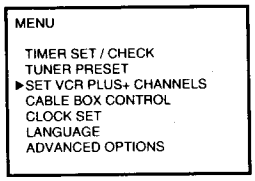


Hookup 6: VCR Plus+ channel setup

1 Find the VCR Plus+ Channel Listing in your program guide. For details, see page 39.

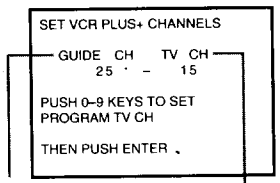
2 For unscrambled channels, if the channels in the program guide are different from the channels that you actually use on your TV, set the channels that are different as follows. For details, see page 40.

❶ Press MENU and select SET VCR PLUS+ CHANNELS.



❷ Enter the program guide channel, then the channel you use on your TV.

❸ Press EXECUTE.

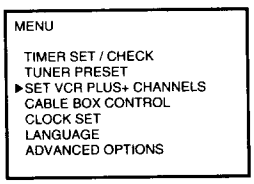


Program guide channel

Your actual TV channel

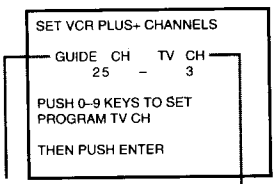
3 For scrambled channels, enter all the scrambled channels you want to record and the cable box output channel (usually 2, 3, or 4). For details, see page 40.

❶ Press MENU and select SET VCR PLUS+ CHANNELS.



❷ Enter the program guide channel, then the cable box output channel.

❸ Press EXECUTE.

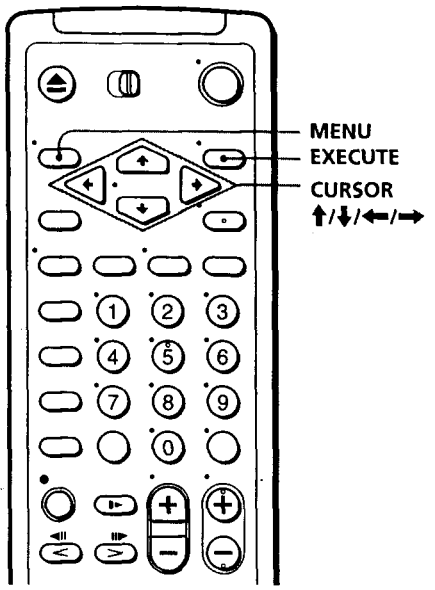


Program guide channel

Cable box output channel

Selecting a language

You can change the on-screen display language.



1 • MENU

• CURSOR

• EXECUTE

Press MENU, then press CURSOR ↑/↓ to move the cursor (▶) to LANGUAGE and press EXECUTE.

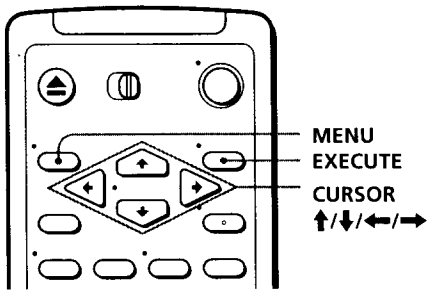
When using the EASY SET UP procedure, skip this step.

2 • CURSOR

• EXECUTE

Press CURSOR ↑/↓ to select ENGLISH, ESPAÑOL, or FRANÇAIS, then press EXECUTE.

Setting the clock



Set the time and date to use the timer feature for recording programs.

Before you start...

- Turn on the VCR and the TV.
- Set the TV to the VCR channel (channel 3 or 4). If your TV is connected to the VCR using A / V connections, set the TV to video input.
- Press TV / VTR to display the VTR indicator in the VCR's display window.

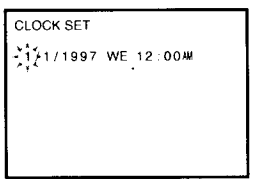
1 • MENU

• CURSOR

• EXECUTE

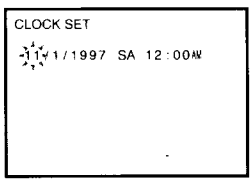
Press MENU, then press CURSOR ↑ / ↓ to move the cursor (▶) to CLOCK SET and press EXECUTE.

When using the EASY SET UP procedure, skip this step.



2 • CURSOR

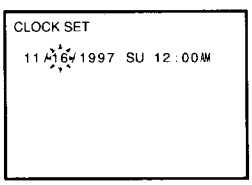
Press CURSOR ↑ / ↓ to set the month.



3 • CURSOR

Press CURSOR → to flash the day and press CURSOR ↑ / ↓ to set the day.

The day of the week is set automatically.



4 • CURSOR

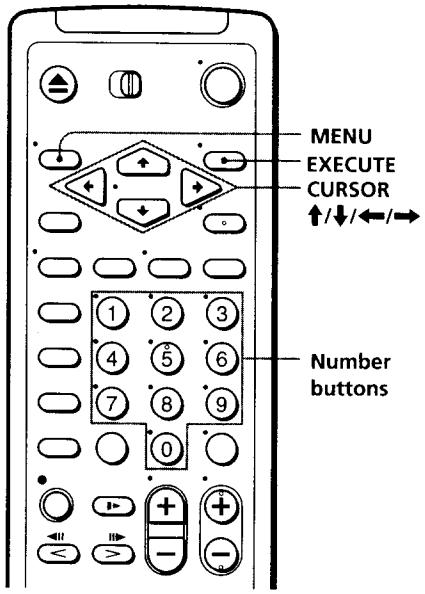
Set the year, hour and minutes in the same way as the day.

5 • EXECUTE

Press EXECUTE to start the clock.

Setting up cable box control

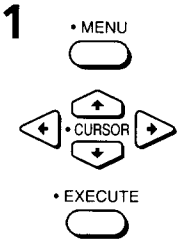
(Skip this section if you are using Hookup 2, 3, 4 or 6.)



Your VCR includes a cable box control feature that allows the VCR to control most brands of cable boxes / DSS receivers via an optional Cable Mouse. With cable box control, the VCR controls channels on the cable box / DSS receiver for timer recording. You can also use the VCR's remote commander to change channels on the cable box / DSS receiver whenever the cable box / DSS receiver is turned on even if the VCR is turned off. To use cable box control, you need to connect the Sony RM-CM101 Cable Mouse (not supplied) (pages 10 and 22) and set the code number and output channel.

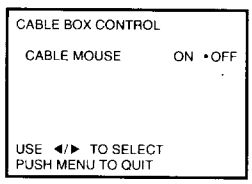
This VCR is programmed with codes necessary to control channel selection on most brands of cable boxes at the time this VCR was manufactured. It is possible that new cable boxes may be introduced that cannot be controlled with the RM-CM101 Cable Mouse. If you have a cable box that is incompatible with this VCR, contact your cable operator — they may be able to provide you with a compatible cable box.

1

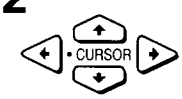


Press MENU, then press CURSOR ↑ / ↓ to move the cursor (▶) to CABLE BOX CONTROL and press EXECUTE.

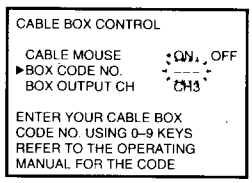
When using the EASY SET UP procedure, skip this step.

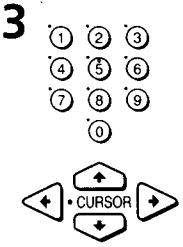


2



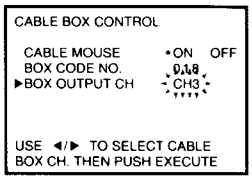
Press CURSOR ← / → to select ON, then press CURSOR ↓.

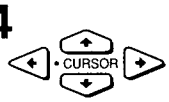


3 

Press the number buttons to enter the cable box/DSS receiver code number, then press CURSOR ↓.

Find your cable box/DSS receiver code number from the chart below.



4 

If you want to control a cable box, press CURSOR ←/→ to select the output channel for the cable box, then press EXECUTE.

If you want to control a DSS receiver, select LINE, then press EXECUTE.

Cable box and DSS receiver brand and the corresponding code numbers

If more than one code number is listed, try entering them one by one, until you come to the correct code for your equipment.

Cable box brand	Code numbers
ABC	018, 022, 024, 028, 217
Antronix	218
Archer	033, 050, 164, 218
BBT	278
Cable Star	067
Cabletenna	033
Cable time	172, 282, 388, 459
Century	164
Citizen	164, 326, 327
Clyde Cablevision	097
Colour Voice	036, 042
Comband	243, 244
Comtronics	051, 071
Decsat	434
Diamond	046
Eagle Comtronics	051

Cable box brand	Code numbers
Eastern	013, 285
Electricord	089
Electus	055
Filmnet	454
Focus	411
Garrard	164
GC Electronics	027, 067, 341
GE	243, 244
GEC	097
Gemini	026, 068, 081, 253
General Instrument	022, 287, 487
Hamlin	020, 031, 045, 270, 284
Hitachi	022
Jasco	164, 326
Jerrold	014, 022, 025, 026, 035, 037, 058, 109, 287, 487

continued

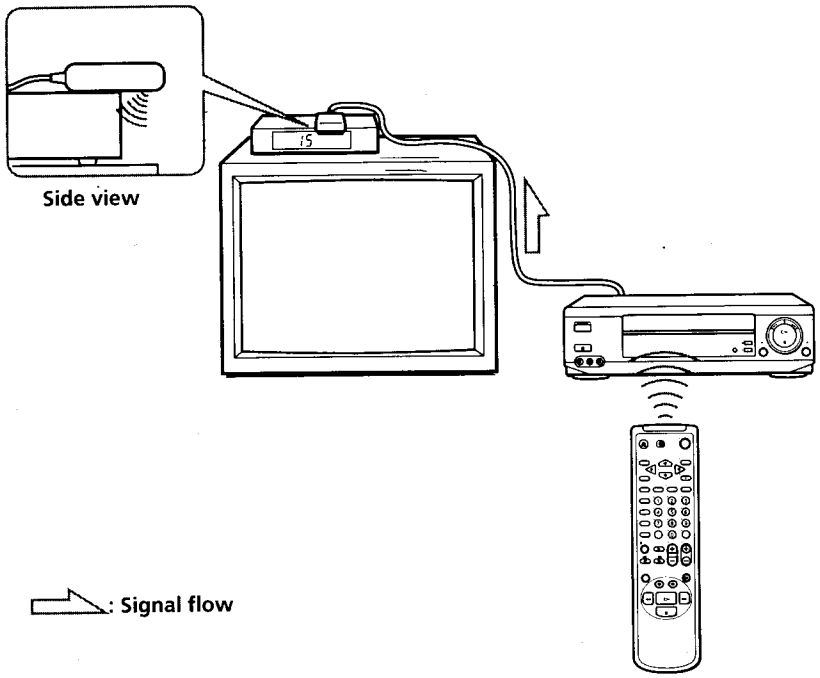
Setting up cable box control (continued)

Cable box brand	Code numbers
Linsay	451
Macom	044
Magnavox	038, 043, 080, 345
Memorex	011
Movie Time	089, 167, 214
Northcoast	325
Novaplex	629
NSC	074, 081, 167, 214
Oak	018, 030, 259
Omniview	382
Panasonic	032, 118
Paragon	011
Philips	036, 038, 039, 040, 041, 042, 071, 301, 345
Philips ECG	253
Pioneer	034, 155, 271, 544, 695
Popular Mechanics	411
Pulsar	011
RCA	032
Realistic	218
Recoton	411
Regal	031, 270, 284, 290
Regency	013
Rembrandt	081
RK	315, 317, 490
Samsung	051, 155
Satbox	386
Scientific Atlanta	017, 019, 028, 288, 338
Seam	521
Sharp	324
Signal	051
Signature	022
SL Marx	051
Spectravision	069
Sprucer	032, 318
Standard Components	107, 166
Starcom	014, 026, 058, 109
Stargate	026, 051
STS	167
Sylvania	012
T-Cable Teletext	116
Tandy	269
Tatung	108
Teknica	157
Tele +1	454
TeleCaption	232
Teleservice	292
Texscan	012, 107
TFC	321
Timeless	429
Tocom	023, 024, 070
Toshiba	011
Tudi	297
TV86	074
TV COM	018, 030, 259
Uniden	236
Unika	033, 164, 218
United Artists	018
United Cable	014
Universal	033, 050, 067, 088, 089, 164, 202, 218, 333
Videoway	261
Vidtech	255
Viewstar	038, 071, 074, 122, 222, 269, 300
Westminster cable	116
Zenith	011, 065, 536
Zentek	411
Wave Master	576

DSS receiver brand	Code numbers
Sony	650
RCA	577

To ensure correct operation

- Place the Cable Mouse so that it hangs out over the cable box/DSS receiver front.
- Do not place the cable box/DSS receiver on top of the VCR.
- Position the cable box/DSS receiver away from the VCR.
- Point the remote commander at the VCR, not at the cable box/DSS receiver.



To check the cable box control setting

1 Press CH +/– on the remote commander. Does the channel indicator on the cable box/DSS receiver change? (Point the remote commander at the VCR, not at the cable box/DSS receiver.)

2 Press all 10 number buttons (0 to 9) on the remote commander. Does the channel indicator on the cable box/DSS receiver change?

If the answer to both 1 and 2 is "yes," you have made the correct setting.

continued

If you cannot get your VCR to control the cable box/DSS receiver

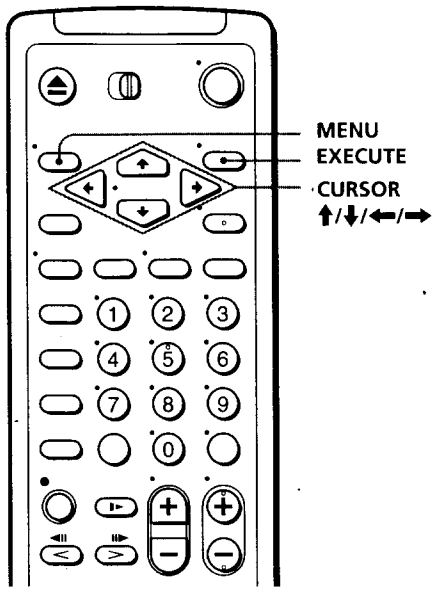
- Check that the Cable Mouse is connected to the CABLE BOX CONTROL jack on the VCR.
- Check the position of the Cable Mouse.
- Place the cable box/DSS receiver and VCR away from each other. Do not place the cable box/DSS receiver on top of the VCR.
- Try the setup again making sure to use the correct control code. If the cable box still does not respond, try the other codes that are listed.

If your cable box still does not operate with the Cable Mouse, contact your cable company to see if they can provide you with a compatible cable box.

Note

- Make sure you turn off the VCR when you plug in or unplug the Cable Mouse. If you unplug the Cable Mouse and plug it in again, turn on the VCR before you use the cable box/DSS receiver control feature.

Presenting channels



(Skip this section if you are using cable box/DSS receiver control.)

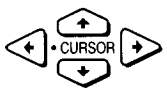
This VCR is capable of receiving VHF channels 2 to 13, UHF channels 14 to 69 and unscrambled CATV channels 1 to 125. First, we recommend that you preset the receivable channels in your area using automatic presetting. Then, if there are any unwanted channels, disable them manually. If you have decided which channels you wish to preset, set them directly using manual presetting.

Before you start...

- Turn on the VCR and the TV.
- Set the TV to the VCR channel (channel 3 or 4). If your TV is connected to the VCR using A/V connections, set the TV to video input.
- Press TV/VTR to display the VTR indicator in the VCR's display window.

Presetting all receivable channels automatically

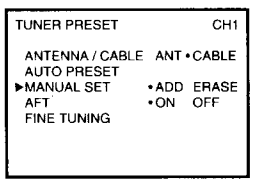
1 • MENU



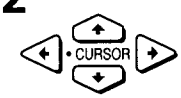
• EXECUTE

Press MENU, then press CURSOR ↑/↓ to move the cursor (▶) to TUNER PRESET and press EXECUTE.

When using the EASY SET UP procedure, skip this step.



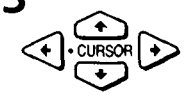
2



Press CURSOR ↑/↓ to select ANTENNA/CABLE.

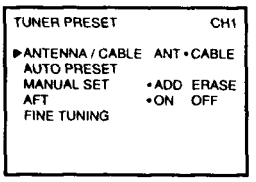
continued

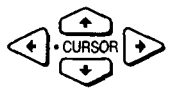
3



• To preset cable TV channels:

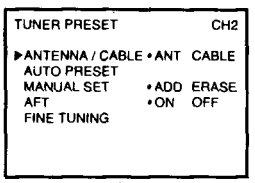
Press CURSOR ⬅/➡ to set ANTENNA/CABLE to CABLE.



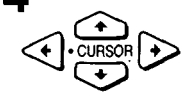


• To preset VHF and UHF channels:

Press CURSOR ⬅/➡ to set ANTENNA/CABLE to ANT.

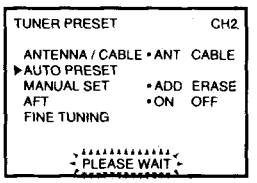


4

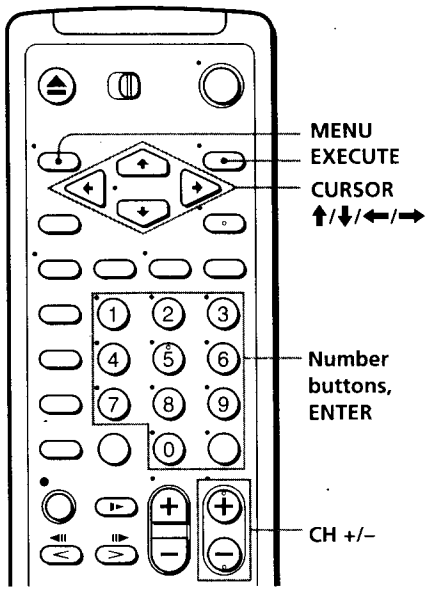


Press CURSOR ⬆/⬇ to select AUTO PRESET, then press EXECUTE.

All receivable channels are preset in numerical sequence. When no more receivable channels can be found, presetting stops and the picture from the lowest numbered channel is displayed on the TV screen.



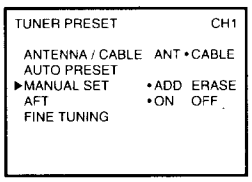
Presetting/disabling channels manually



1 • MENU

• EXECUTE

Press MENU and select TUNER PRESET, then press EXECUTE.



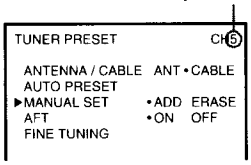
2

• To preset a channel:

1 Press the number buttons to enter the channel number, then press ENTER.

2 Press CURSOR ← / → to set MANUAL SET to ADD.

Channel to be preset



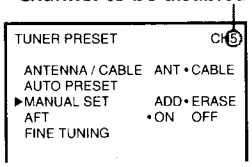
• CH

• To disable a channel:

1 Press CH +/– to select the channel number.

2 Press CURSOR ← / → to set MANUAL SET to ERASE.

Channel to be disabled



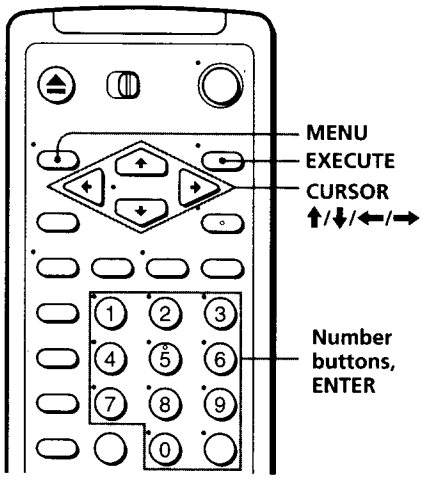
3 • EXECUTE

Repeat step 2 to preset or disable channels as required, then press EXECUTE.

continued

If the picture is not clear

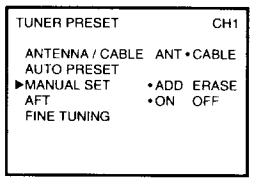
Normally, the Auto Fine Tuning (AFT) function automatically tunes in channels clearly. If, however, the picture of a channel is not clear, you can also use the manual tuning function.



1 • MENU

• EXECUTE

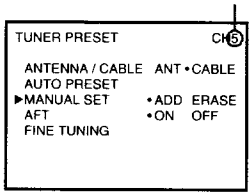
Press MENU and select TUNER PRESET, then press EXECUTE.



2 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⓪ ○

Press the number buttons to select the channel you want to fine-tune, then press ENTER.

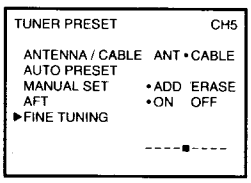
Selected channel



3 • CURSOR

Press CURSOR ↑/↓ to select FINE TUNING.

The fine tuning meter appears.

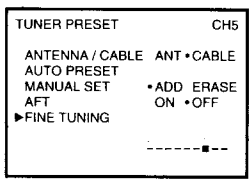


4 • CURSOR

• EXECUTE

Press CURSOR ←/→ to adjust to a clearer picture, then press EXECUTE.

Note that the AFT setting switches to OFF.



Setting up VCR Plus+

How VCR Plus+ works

Whenever you want to record a TV program, all you need to do is look up the program's "PlusCode," a number assigned to each program that's published in the TV section of most newspapers, cable TV listings, and even *TV GUIDE* magazine. Then, just enter the PlusCode of the program you want and the VCR is automatically programmed to record that show. It's that simple.

Example of "PlusCode"

PlusCode

5:30 14 MOVIE —Musical (2hrs.) 33044
2 SPORT — Golf (1hr. 25min.) 42060
CNN — WS 9974
6:30 2 3 4 DRAMA —Comedy (2hrs.) 17390
5 SCIENCE AND TECHNOLOGY
(1hr. 15min.) 73457

How to set up your VCR

Setting up your VCR involves coordinating the TV channel number (the number you turn to on your TV or VCR to watch a program) with the guide channel (the number that's assigned to that channel in your program guide). To get the guide channel numbers, find the "Channel Line-up Chart" in the program guide for your area that features VCR PlusCodes. It usually looks like the example to the right.

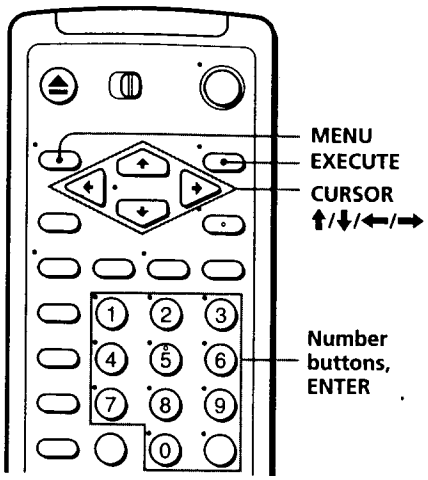
For each channel your VCR receives, use the Channel Line-up Chart to check that the channel numbers match. For example, if HBO is listed in the Channel Line-up Chart on channel 33, and your VCR receives HBO on channel 5, you need to coordinate these numbers using the following procedure. For channels in which the numbers are the same, you can skip this procedure.

Example of "Channel Line-up Chart"

CABLE CH	CABLE TV	VCR Plus+ GUIDE CH
16	AMC American Movie Classics	35
17	BRV Bravo (program grid only)	54
20	CNN Cable News Network	42
21	CSP C-SPAN	28
22	DIS The Disney Channel	53
25	DSC The Discovery Channel	37
34	ESN ESPN	34
35	FAM The Family Channel	47
5	HBO Home Box Office	33
27	LIF Lifetime	46
29	MAX Cinemax	45
30	MTV Music Television	48
31	NIK Nickelodeon	38
38	SC Sports Channel	59
39	SCA Sports Channel America	70
45	SHO Showtime	41
17	TBS TBS SuperStation	43
44	TMC The Movie Channel	58
49	TNN The Nashville Network	49
50	TNT Turner Network Television	52
51	USA USA Network	44

SAMPLE

continued



1 • MENU

• CURSOR

• EXECUTE

Press MENU, then press CURSOR ↑/↓ to move the cursor (▶) to SET VCR PLUS+ CHANNELS and press EXECUTE.

SET VCR PLUS+ CHANNELS
GUIDE CH TV CH
– –
PUSH 0–9 KEYS TO SET PROGRAM GUIDE CH
OR PUSH EXECUTE TO SEE VCR PLUS+ CHANNEL LIST

2 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⓪ ○

Enter the channel number assigned in the program guide and press ENTER.

SET VCR PLUS+ CHANNELS
GUIDE CH TV CH
33 – –
PUSH 0–9 KEYS TO SET PROGRAM GUIDE CH
THEN PUSH ENTER

3 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⓪ ○

- If you made Hookup 1 or 3: Enter the actual number on your TV (and VCR) and press ENTER.
- If you made Hookup 2: Enter the cable output channel (usually 2, 3 or 4) and press ENTER.
- If you made Hookup 4: Enter the actual number on your TV (and VCR) for an unscrambled channel and press ENTER. For a scrambled channel, enter the cable box output channel (usually 2, 3 or 4) and press ENTER.

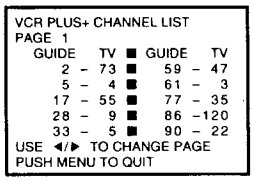
SET VCR PLUS+ CHANNELS
GUIDE CH TV CH
33 – 5
PUSH 0–9 KEYS TO SET PROGRAM TV CH
THEN PUSH ENTER

SET VCR PLUS+ CHANNELS
GUIDE CH TV CH
33 – 3
PUSH 0–9 KEYS TO SET PROGRAM TV CH
THEN PUSH ENTER

4 Repeat steps 2 and 3 for each channel whose numbers don't match.

5 • EXECUTE

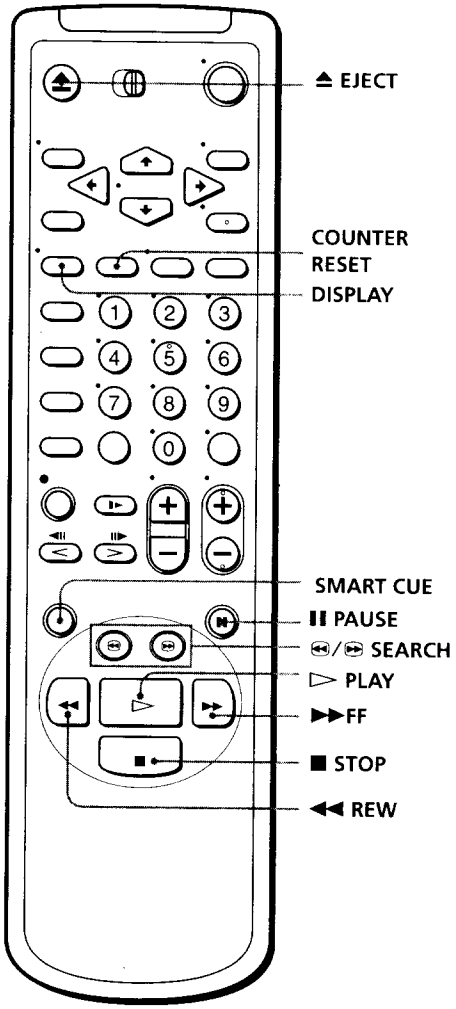
When you have set all channels, press EXECUTE to confirm your channel settings.



6 • MENU

When you've finished, press MENU to exit.

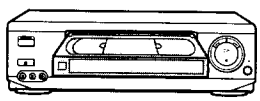
Playing a tape



1 Turn on your TV and set it to the video channel.

2 Insert a tape.

The VCR turns on and starts playing automatically if you insert a tape with its safety tab removed.



3 PLAY ▷

Press ▷ PLAY.

When the tape reaches the end, it will rewind automatically.

Additional tasks

To	Press
Stop play	■ STOP
Pause play	❚❚ PAUSE
Resume play after pause	❚❚ PAUSE or ▷ PLAY
Search forward	▶▶ FF or ⊕ SEARCH during playback
Search backward	◀◀ REW or ⊖ SEARCH during playback
Fast-forward the tape	▶▶ FF during stop
Rewind the tape	◀◀ REW during stop
Eject the tape	⏏ EJECT

To skip playback

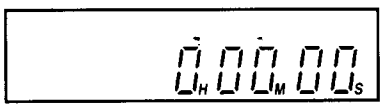
You can skip a portion of playback you don't want to watch such as a commercial and restart playback by pressing a single button.

Press SMART CUE during playback of the scene you want to skip. The VCR starts searching.

Press SMART CUE again when you find the scene you want to watch. The VCR stops searching, rewinds a few seconds, then resumes normal playback.

To use the time counter

At the point on the tape that you want to find later, press COUNTER RESET. The counter in the display window resets to "0H00M00S." Search for the point afterwards by referring to the counter.

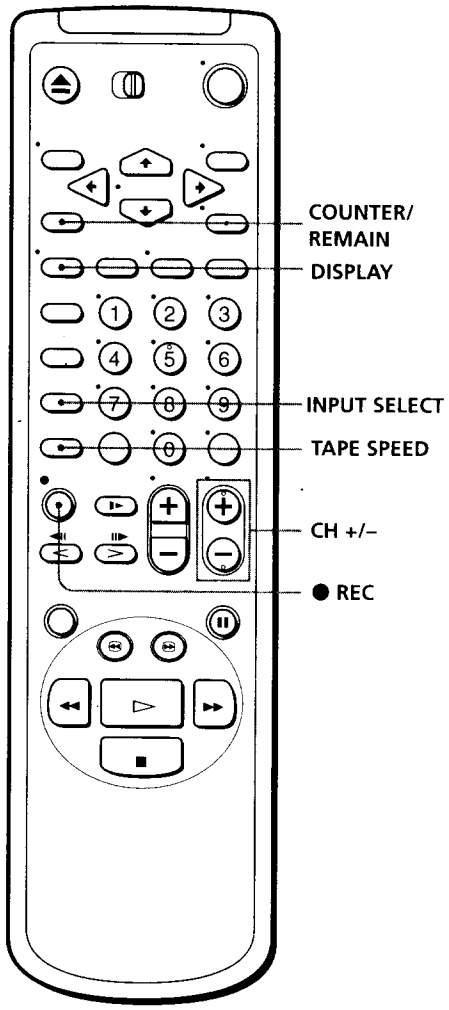


To display the counter on the TV screen, press DISPLAY.

Notes

- Tapes recorded in the LP mode on other VCRs can be played back on this VCR but the picture quality cannot be guaranteed.
- The counter resets to "0H00M00S" whenever a tape is reinserted.
- The counter stops counting when it comes to a portion with no recording.

Recording TV programs

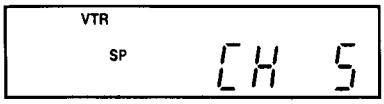


1 Turn on your TV and set it to the video channel.
To record from a cable box, turn it on.

2 Insert a tape with its safety tab in place.

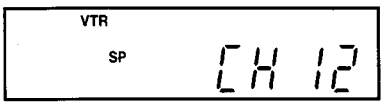
3 INPUT SELECT

Press INPUT SELECT until a channel number appears in the display window.



4 • CH

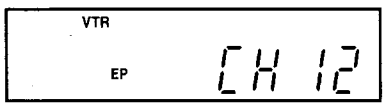
Press CH +/– to select the channel you want to record.



5 TAPE SPEED

Press TAPE SPEED to select the tape speed, SP or EP.

EP provides recording time three times as long as SP, however, SP produces better picture and audio quality.



6 ● REC

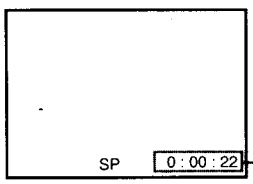
Press ● REC to start recording.

To stop recording

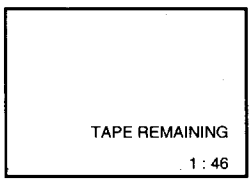
Press ■ STOP.

To check the remaining time

Press DISPLAY. With the display on, press COUNTER/REMAIN to check the remaining time. Each time you press COUNTER/REMAIN, the time counter and the remaining time appear alternately. The remaining time indicator also appears in the display window.



Time counter



To check the remaining time of a T-140, T-180 or longer tape, set TAPE SELECT in the ADVANCED OPTIONS menu to "180." (For details, see page 58.)

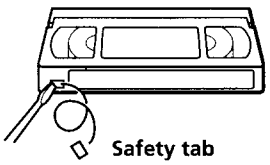
continued

To watch another TV program while recording

1. Press TV/VTR to turn off the VTR indicator in the display window.
2. If the TV is connected to the VCR's LINE OUT jacks, set the TV to TV input; if not, skip this step.
3. Select another channel on the TV.

To save a recording

To prevent accidental erasure, break off the safety tab as illustrated. To record on a tape again, cover the tab hole with adhesive tape.



Safety tab

Tips

- To select a channel, you can use the number buttons on the remote commander. Enter the channel number, then press ENTER.
- You can select a video source from the LINE-1 IN or LINE-2 IN jacks using INPUT SELECT.
- The display appears on the TV screen indicating information about the tape, but the information won't be recorded on the tape.
- If you don't want to watch TV while recording, you can turn off the TV. When using a cable box, make sure to leave it on.

Notes

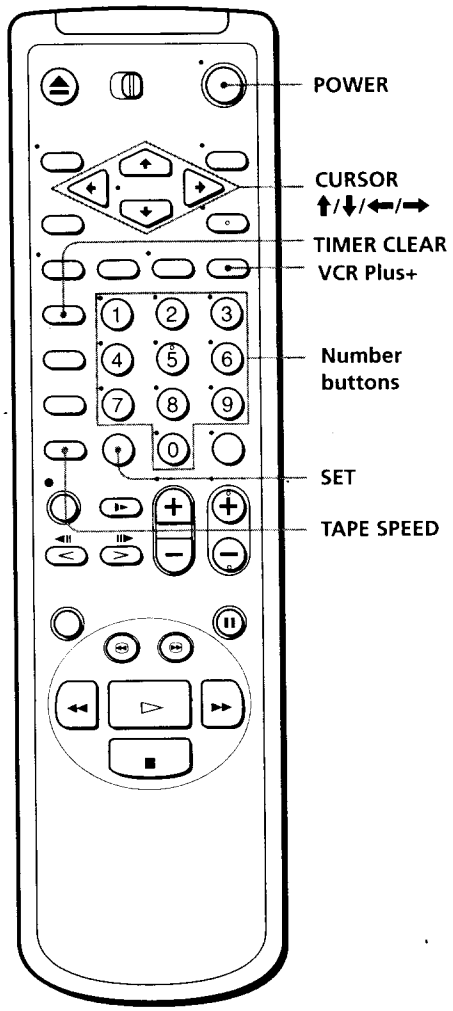
- The remaining time may not be indicated accurately for:
  — short tapes less than T-20
  — T-130
  — T-210
  — tapes recorded in the LP mode.
- The display doesn't appear during still (pause) mode, search mode or slow-motion playback.
- It may take up to one minute for the VCR to calculate and display the remaining time after you press DISPLAY.

Recording TV programs using VCR Plus+

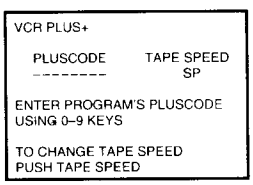
Just enter the program's PlusCode listed in the TV program guide. The date, times and channel number of that program are set automatically. You can preset up to eight programs at a time.

Before you start...

- Check that the VCR clock is set to the correct time.
- Turn on your TV and set it to the video channel. When using a cable box, turn it on.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.



1 VCR Plus+ Press VCR Plus+.

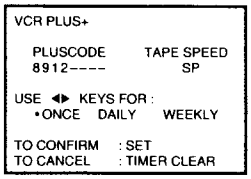


continued

2 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

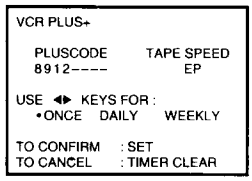
Press the number buttons to enter the program's PlusCode.

If you make a mistake, press TIMER CLEAR and re-enter the correct number.



3 TAPE SPEED

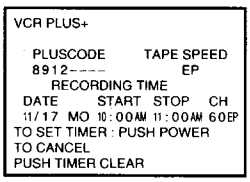
Press TAPE SPEED to select SP or EP.



4 • CURSOR, SET

Select ONCE, DAILY or WEEKLY by using CURSOR ←/→, then press SET:

To record	Select
Only once	ONCE
Everyday Monday to Friday	DAILY
Once a week	WEEKLY



The date, start and stop times, channel number and tape speed appear on the TV screen. If the information is not correct, press TIMER CLEAR to cancel the setting.

5

To enter another setting, repeat steps 1 to 4.

6 • POWER

Press POWER to turn off the VCR.

The TIMER indicator on the VCR lights up and the VCR stands by for recording. When using a cable box, leave it on.

To stop recording

To stop the VCR while recording, press ■STOP.

To use the VCR after setting the timer

To use the VCR before a timer recording begins, just press POWER. The TIMER indicator turns off and the VCR switches on. Remember to press POWER to reset the VCR in timer recording standby after using the VCR.

You can also do the following tasks while the VCR is recording:

- Reset the counter.
- Display tape information on the TV screen.
- Check the timer settings.
- Watch another TV program.

To lock the VCR after setting the timer (Child Lock)

Hold down POWER on the VCR until the VCR beeps. The VCR turns off and the 🔑 indicator appears in the display window. The VCR will not work except for timer recording.

To unlock the VCR, hold down POWER on the VCR until the VCR beeps. The VCR turns on and the 🔑 indicator disappears from the display window.

To stop timer recording while the VCR is locked, press ■ STOP on the VCR. The recording stops and the VCR is unlocked.

Tip

- To cancel the procedure, press VCR Plus+ before pressing SET.

Note

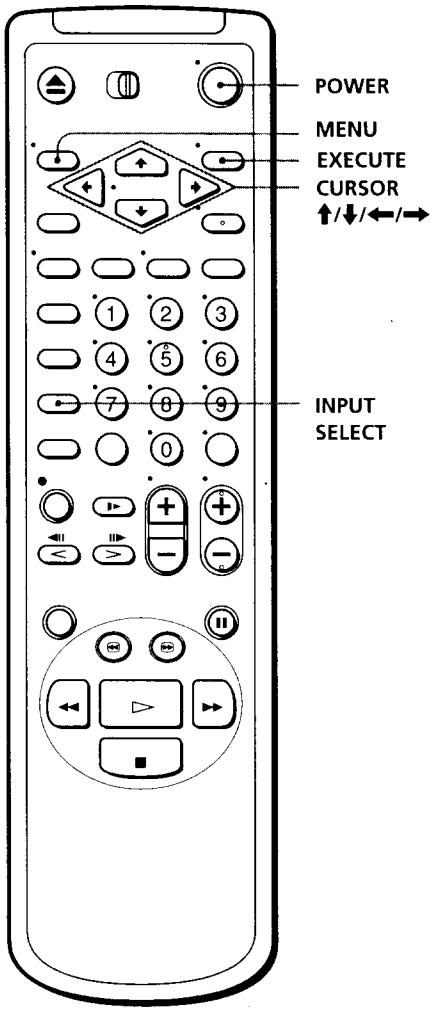
- If the VCR doesn't accept the PlusCode, this means that:
  - The PlusCode is incorrect.
  - ONCE, DAILY or WEEKLY was selected incorrectly. You cannot select DAILY or WEEKLY for a program that airs more than seven days ahead.

Setting the timer manually

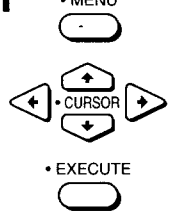
If VCR Plus+ is not available in your area, follow the instructions below to set the timer to record programs.

Before you start...

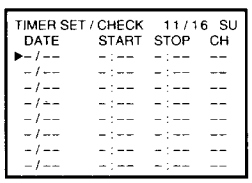
- Check that the VCR clock is set to the correct time.
- Turn on your TV and set it to the video channel. When using a cable box, turn it on.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.



1 • MENU



Press MENU and select TIMER SET/CHECK, then press EXECUTE.



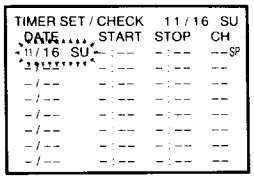
2 • CURSOR

Set the date, start and stop times, channel number and tape speed:

1 Press CURSOR ➡ to flash each item in turn.

2 Press CURSOR ⬆/⬇ to set each item.

To correct a setting, press CURSOR ⬅ to return to that setting and reset.



To record the same program every day or the same day every week, press CURSOR ⬇ while the date is flashing. For details, see "Daily / weekly recording" on this page.

To record from a source connected to the LINE IN jacks, press INPUT SELECT to display "L1" or "L2" in the "CH" position.

3 • CURSOR

Press CURSOR ➡ to confirm the setting.

The cursor (▶) appears at the beginning of the line. To enter another setting, move the cursor to the next line and repeat step 2.

4 • EXECUTE

Press EXECUTE.

5 • POWER

Press POWER to turn off the VCR.

The TIMER indicator on the VCR lights up and the VCR stands by for recording. When using a cable box, leave it on.

Daily/weekly recording

In step 2 above, press CURSOR ⬇ to select the recording pattern. Each time you press CURSOR ⬇, the indication changes as shown below.

the current date → SU-SA → MO-SA → MO-FR → EVERY SA → ..... → EVERY MO → EVERY-SU → 1 month later → (dates count down) → the current date

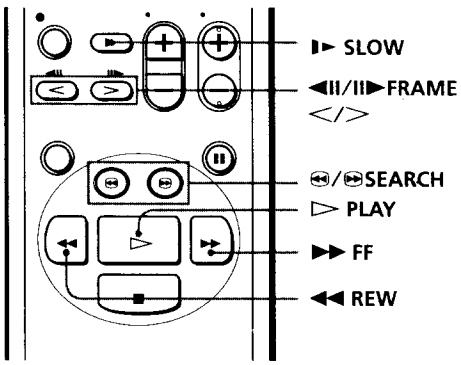
Tips

- To set the channel, you can also use the CH+/– or number buttons.
- To set the tape speed, you can also use TAPE SPEED.

Note

- If you are using cable box control, you cannot select "L1" or "L2".

Playing/searching at various speeds



Playback options	Operation
Fast-forward / rewind	During stop, press ►► FF or ◄◄ REW.
View the picture during fast-forward or rewind	During fast-forward, keep pressing ►► FF. During rewind, keep pressing ◄◄ REW.
Play at high speed	During playback or pause, press ⏩ SEARCH or ⏪ SEARCH. To change direction, press > or <.
Play in slow motion	During playback or pause, press I► SLOW. To change direction, press > or <.
Play frame by frame	During pause, press II►FRAME or ◄IIFRAME. Hold the button down to play one frame each second.
Play in reverse	During playback, press <.
Rewind and start play	During stop, press ▷ PLAY on the VCR while pressing ◄◄ REW on the VCR.

To resume normal playback

Press ▷ PLAY.

Tip

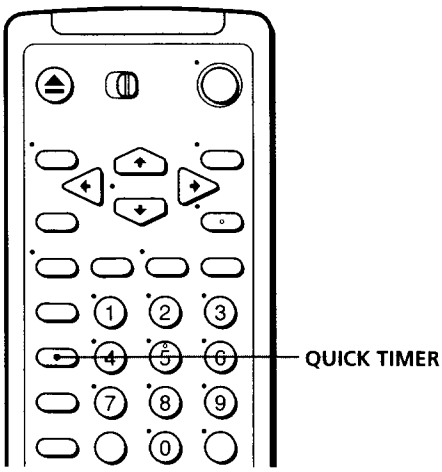
- Adjust the picture using the TRACKING +/– buttons on the VCR if:
  - Streaks appear while playing in slow motion.
  - The picture shakes while pausing.

Notes

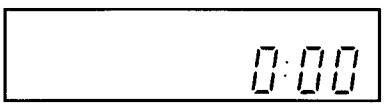
- The sound is muted during these operations.
- Tapes recorded in the LP mode on other VCRs can be played back on this VCR but the picture quality cannot be guaranteed.
- The picture may have snow:
  - when playing at high speed in reverse
  - when playing in reverse slow motion
  - when playing in reverse.

Recording TV programs using the quick timer

After starting recording in the normal way, you can have the VCR stop recording automatically after a specified duration.

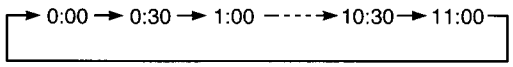


1 While recording, press QUICK TIMER once.



2 Press QUICK TIMER repeatedly to set the duration.

Each press advances the time in increments of 30 minutes.



The duration decreases minute by minute to 0:00, then the VCR stops recording and turns off automatically.

To extend the duration

Press QUICK TIMER repeatedly to set to the new duration.

To stop the VCR while recording

Press ■ STOP.

Using the quick timer during stop mode

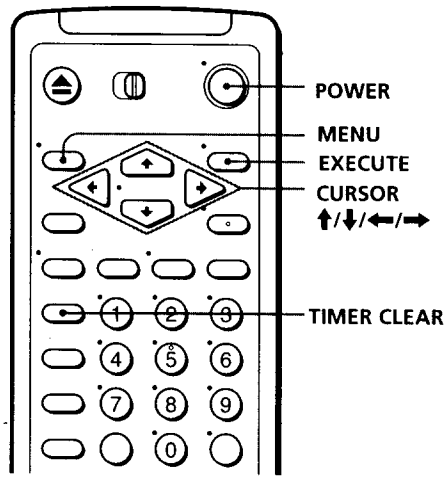
1 Press QUICK TIMER.

2 Press CH +/– or INPUT SELECT to select the channel you want to record.

3 Press QUICK TIMER repeatedly to set the recording duration.

The recording starts.

Checking/ changing/ canceling timer settings



Before you start...

- Turn on your TV and set it to the video channel.

1 Press POWER to turn on the VCR.

2 Press MENU and select TIMER SET/CHECK:

- If you want to change a setting, go on to the next step.
- If you do not need to change the settings, press EXECUTE, then turn off the VCR to return to recording standby.

TIMER SET / CHECK			11/16 SU		
DATE		START	STOP		CH
▶11/17	MO	7:00AM	8:00AM		6SP
11/25	TU	10:30PM	11:15PM		50EP
MO – SA		1:00PM	3:00PM		L1EP
EVERY	SU	11:55AM	1:30PM		42SP
–/–		–:–	–:–		–
–/–		–:–	–:–		–
–/–		–:–	–:–		–
–/–		–:–	–:–		–

3 Press CURSOR ↑/↓ to select the setting you want to change or cancel:

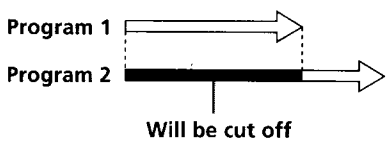
- To change the setting, press CURSOR ←/→ to flash the item you want to change, and press CURSOR ↑/↓ to reset it. Then, press CURSOR → repeatedly until the cursor (▶) appears at the beginning of the line.
- To cancel the setting, press TIMER CLEAR.

4 Press EXECUTE.

If any timer settings remain, turn off the VCR to return to recording standby.

When the timer settings overlap

The program that starts first has priority and the second program starts recording only after the first program has finished. If the programs start at the same time, the program listed first in the menu has priority.



Recording stereo and bilingual programs

Recording stereo programs

This VCR automatically receives and records stereo programs. When a stereo program is received, the STEREO indicator lights up. If there is noise in the stereo program, set AUTO STEREO in the ADVANCED OPTIONS menu to OFF. The sound will be recorded in monaural (on both hi-fi and normal audio tracks) but with less noise. For details, see page 58.

Recording bilingual programs

Normally, this VCR records only the main sound. When a SAP (Second Audio Program) is received, the SAP indicator lights up. To record only SAP sound, set TUNER AUDIO in the ADVANCED OPTIONS menu to SAP. For details, see page 58.

Selecting the sound while playing

Press AUDIO MONITOR to select the desired sound. (The sound being recorded will not change.)

Stereo program

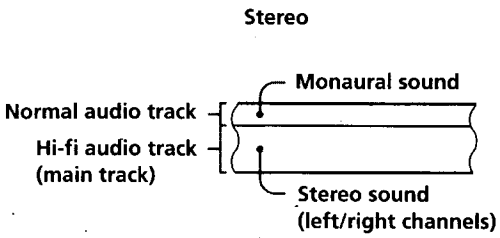
To listen to	Indicator on the TV screen
Stereo	STEREO
Left channel	L
Right channel	R
Monaural sound on the normal audio track*	No indicator appears

* Usually the mixed sound of left and right channels

continued

How sound is recorded on a video tape

The VCR records sound onto two separate tracks. Hi-fi audio is recorded onto the main track along with the picture. Monaural sound is recorded onto the normal audio track along the edge of the tape.



Notes

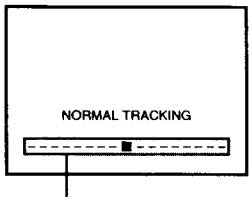
- To play a tape in stereo, you must use the A / V connections.
- When you play a tape recorded in monaural, the sound is heard in monaural regardless of the AUDIO MONITOR setting.

Adjusting the picture

Adjusting the tracking

Although the VCR automatically adjusts the tracking when playing a tape (the tracking indicator ▨ flashes in the display window, then goes off), distortion may occur if the tape was recorded in poor condition. In this case, manually adjust the tracking.

Press the TRACKING +/– buttons on the VCR to display the tracking meter. The distortion should disappear as you press one of the two buttons (the ▨ indicator lights up). To resume automatic tracking adjustment, eject the tape and reinsert it.



Tracking meter

About Adaptive Picture Control (APC)

Adaptive Picture Control (APC) automatically improves recording and playback quality by adjusting the VCR to the condition of the video heads and tape. To maintain better picture quality, we recommend that you set APC to ON in the ADVANCED OPTIONS menu (with the APC indicator in the display window lit).

APC playback

The APC function automatically works on all types of tapes, including rental tapes and tapes that were not recorded with APC.

APC recording

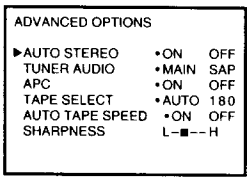
Whenever you insert a tape and first start recording, the VCR adjusts to the tape using the APC function (the APC indicator flashes rapidly). This adjustment is retained until the tape is ejected.

Notes

- The auto tracking adjustment cannot be guaranteed on tapes recorded in LP mode on other VCRs.
- The APC function doesn't work if the tape speed is automatically changed from the SP to EP mode during a timer recording, unless the tape has been recorded in the EP mode with the APC function.
- There is a delay of a few seconds before the VCR actually starts recording while the VCR analyzes the tape. To avoid the delay, first set the VCR to recording pause (the APC indicator flashes slowly) and press ● REC to have the VCR analyze the tape. After the APC indicator stops flashing, press ❚❚ PAUSE to start recording immediately. If you press ❚❚ PAUSE before the APC indicator stops flashing, the APC function is canceled.

Changing menu options

1 Press MENU and select ADVANCED OPTIONS.



2 Press CURSOR ↑/↓ to select the option to change, then press CURSOR ←/→ to change the setting.

3 Press EXECUTE to return to the original screen.

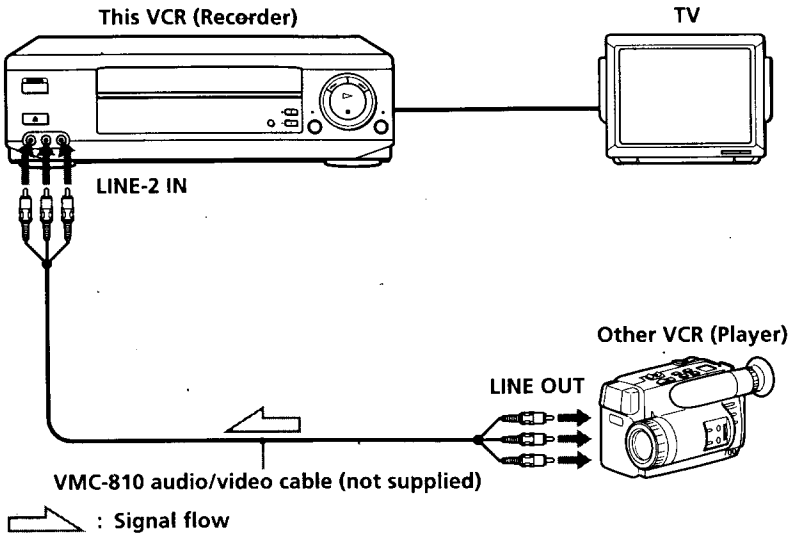
Menu choices

Initial settings are indicated in bold print.

Menu option	Set this option to
AUTO STEREO	**ON** to receive stereo programs. OFF to reduce noise; the sound changes to monaural.
TUNER AUDIO	**MAIN** to record the main sound. SAP to record the SAP (Second Audio Program) sound.
APC	**ON** to switch on the APC (Adaptive Picture Control) function and improve picture quality. OFF to switch off APC.
TAPE SELECT	**AUTO** or 180 (when using a T-140, T-180 or longer tape) to select the tape length and display the remaining time correctly.
AUTO TAPE SPEED	**ON** to change the timer recording tape speed automatically to the EP mode when the remaining tape becomes shorter than the recording time. OFF to keep the set tape speed.
SHARPNESS	L (Low) through H (High) to adjust the sharpness of the picture. L to turn off the sharpness control.

Editing with another VCR

How to hook up to record on this VCR



How to hook up to a stereo system

Connect LINE-2 IN AUDIO on this VCR to the audio output jacks on the stereo system, using the RK-C510KS audio cable (not supplied).

Notes

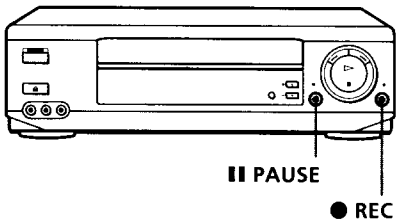
- Make sure you connect the plugs to jacks of the same color.
- If the other VCR is a monaural type, connect the audio plug to the AUDIO L (white) jack. The sound is recorded on both right and left channels. When connecting to the AUDIO R (red) jack, the sound is recorded only on the right channel.
- If you connected this VCR to both the LINE IN and LINE OUT jacks of the other VCR, select the input correctly to prevent a humming noise.

continued

Operation (when recording on this VCR)

Before you start editing

- Turn on your TV and set it to the video channel.
- Press INPUT SELECT on the remote commander to display "L1" or "L2" in the display window.
- Press TAPE SPEED on the remote commander to select the tape speed, SP or EP.



1. Insert a source tape with its safety tab removed into the other (playback) VCR. Search for the point to start playback and set it to playback pause.
2. Insert a tape with its safety tab in place into this (recording) VCR. Search for the point to start recording and press II PAUSE.
3. Press ● REC on this VCR and set it to recording pause.
4. To start editing, press the II PAUSE buttons on both VCRs at the same time.

To stop editing

Press the ■ STOP buttons on both VCRs.

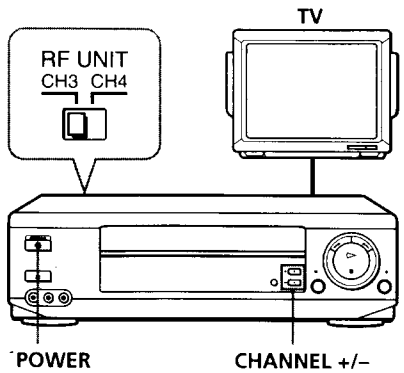
Note

- If you start recording following the procedure above, the VCR won't start recording with the APC function. To record a tape with the APC function, press ● REC again during recording pause in step 3 so that the VCR analyzes the tape. Then when you start recording in step 4, press II PAUSE immediately after the APC indicator stops flashing. If you press II PAUSE before the APC indicator stops flashing, the APC function is canceled.

General setup information

Setting the RF unit

When connecting the VCR to the TV using only the antenna cable, you must set the RF UNIT switch on the rear of the VCR so that the TV can receive the correct signal from the VCR.



1 Set the RF UNIT switch on the rear of the VCR to CH 3 or CH 4, whichever channel is not used in your area. If both are used, set the switch to either channel.

2 Press POWER to turn on the VCR.

3 Press TV/VTR on the remote commander to turn on the VTR indicator in the VCR's display window.

4 Press CHANNEL +/– to display a channel number in the display window. Select an active channel number in your area.

5 Turn on your TV and set it to the channel you selected in step 1 (channel 3 or 4).

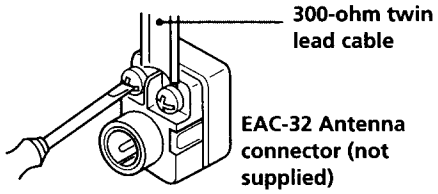
The selected TV channel broadcast appears on the TV screen. If the channels change when you press CHANNEL +/–, you have made the correct setting.

Whenever you use the VCR, set the TV to the channel selected in step 1.

continued

Attaching the external antenna connector

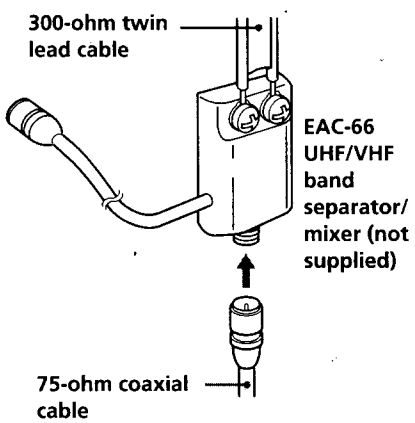
When using a 300-ohm twin lead cable for VHF/UHF antenna, use the EAC-32 antenna connector (not supplied) to connect the antenna to the VCR.



1 Loosen the screws on the antenna connector.
2 Wind the twin leads around the screws on the antenna connector.
3 Retighten the screws.

Attaching a UHF/VHF band mixer

When using both 75-ohm coaxial cable and 300-ohm twin lead cable for VHF/UHF antenna, use the EAC-66 UHF/VHF band separator/mixer (not supplied) to connect the antenna to the VCR.



1 Loosen the screws on the mixer.
2 Wind the twin leads around the screws on the mixer.
3 Retighten the screws.
4 Connect the 75-ohm coaxial cable to the mixer.

Troubleshooting

If you have any questions or problems not covered below, please consult your nearest Sony dealer.

	Symptom	Remedy
Power	The POWER switch does not function.	• Connect the AC power cord securely. • Make sure the VCR is not locked. To unlock, hold down POWER on the VCR until the VCR beeps and the 🔑 indicator disappears.
	The power is turned on but the VCR does not operate.	• Moisture condensation occurs. Turn the power off, unplug the AC power cord and leave the VCR to dry for over an hour.
Clock	The clock has stopped and "–:– –" lights in the display window.	• The clock stops if the VCR is disconnected from the wall outlet for more than one hour. Reset the clock (and timer).
Playback	The playback picture does not appear on the TV screen.	• Make sure the TV is set to the channel for the VCR. If you are using a monitor, set it to video input.
	The picture is not clear.	• Adjust the tracking with the TRACKING +/– buttons. • The video heads are dirty (see below). Clean the video heads using the Sony T-25CL video head cleaning cassette. If this cleaning cassette is not available in your area, have the heads cleaned at your nearest Sony service facility (a standard service charge will be required). Do not use a commercially available wet-type cleaning cassette, as it may damage the video heads. • The video heads may have to be replaced. Consult your local Sony dealer for more information.
	The picture rolls vertically during picture search.	• Adjust the vertical hold control on the TV or monitor.
	The picture has no sound.	• The tape is defective. Use a new tape.

Symptoms caused by contaminated video heads

• Normal picture **• Rough picture** **• Unclear picture** **• No picture (or black & white screen appears)**

initial → **terminal**

continued

Troubleshooting (continued)

	Symptom	Remedy
Recording	A TV program does not appear on the TV screen.	• Make sure the TV is set to the channel for the VCR. If you are using a monitor, set it to video input.
	TV reception is poor.	• Adjust the TV antenna.
	The tape starts playing as soon as it is inserted.	• The safety tab has been removed. To record on this tape, cover the tab hole.
	The tape ejects when you press ● REC.	• Check that the safety tab has not been removed.
	Nothing happens when you press ● REC.	• Make sure the tape is not at its end. • Select the correct source. Select a channel number with the CH +/– buttons when recording TV programs; select "L1" or "L2" with the INPUT SELECT button when recording from other equipment.
Timer recording	The timer does not operate.	• Check that the clock is set. • Make sure a tape has been inserted. • Check that the safety tab has not been removed. • Make sure the tape is not at its end. • Make sure a program has been set for timer recording. • Make sure your timer settings have not already passed the current time. • Check that the cable box is turned on. • The clock stops if the VCR is disconnected from the wall outlet for more than one hour. Reset the clock and timer.
Others	A tape cannot be inserted.	• Check that a tape isn't already in the tape compartment.
	The remote commander does not function.	• Make sure you are pointing the remote commander at the remote sensor on the VCR. • Replace all the batteries in the remote commander with new ones if they are weak. • Make sure the [TV] / [VTR] remote control switch is set correctly.
	The tracking indicator does not appear on the screen.	• The recording condition of the tape is very poor and tracking cannot be adjusted.
	You cannot control other TVs.	• Set your TV's code number. The code number resets to 01 when you replace the batteries of the remote commander.
	The VCR needs to be cleaned.	• Clean the cabinet, panel and controls with a dry, soft cloth, or a soft cloth slightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzine.

Specifications

System

Format
VHS NTSC standard
Video recording system
Rotary head helical scanning FM system
Video heads
Double azimuth four heads
Video signal
NTSC color, EIA standards
Tape speed
SP: 33.35 mm/s (1 3/8 inches/s)
EP: 11.11 mm/s (7/16 inches/s)
LP: 16.67 mm/s (11/16 inches/s), playback only
Maximum recording/playback time
8 hrs. in EP mode (with T-160 tape)
Fast-forward and rewind time
Approx. 3 min. (with T-120 tape)

Tuner section

Channel coverage
VHF 2 to 13
UHF 14 to 69
CATV A-8 to A-1, A to W, W+1 to W+84
Antenna
75-ohm antenna terminal for VHF/UHF

Inputs and outputs

LINE-1 IN and -2 IN
VIDEO IN, phono jack (1 each)
Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
AUDIO IN, phono jack (2 each)
Input level: 327 mVrms
Input impedance: more than 47 kilohms
LINE OUT
VIDEO OUT, phono jack (1)
Output signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
AUDIO OUT, phono jack (2)
Standard output: 327 mVrms
Load impedance: 47 kilohms
Output impedance: less than 10 kilohms
CABLE BOX CONTROL (CONTROL S OUT)
Stereo mini jack (plug in power) (1)

Timer section

Clock
Quartz locked
Timer indication
12-hour cycle
Timer setting
8 programs per month (max.)
Power back-up
Built-in self-charging capacitor
Back-up duration: up to 1 hour at a time

General

Power requirements
120 V AC, 60 Hz
Power consumption
24 W
Operating temperature
5°C to 40°C (41°F to 104°F)
Storage temperature
–20°C to 60°C (–4°F to 140°F)
Dimensions
Approx. 355 × 102 × 280 mm (w/h/d)
(Approx. 14 × 4 1/8 × 11 1/8 inches) including projecting parts and controls
Mass
Approx. 4.0 kg (8 lb 13 oz)

Supplied accessories

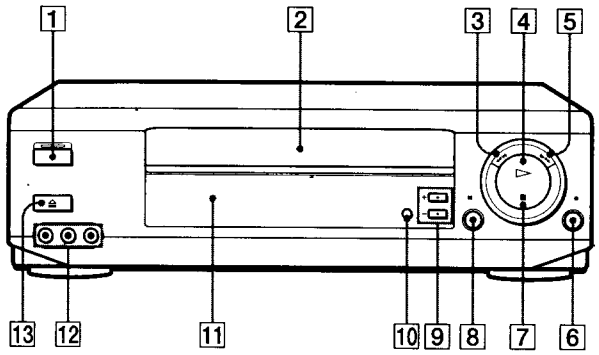
Remote commander (1)
Size AA (R6) batteries (2)
75-ohm coaxial cable with F-type connectors (1)
Audio/video cable (3 phono to 3 phono) (1)

Design and specifications are subject to change without notice.

Index to parts and controls

Refer to the pages indicated in parentheses ( ) for details.

Front panel



1 POWER switch/indicator

2 Tape compartment

3 ◀◀ REW button (42, 52)

4 ▷ PLAY button (42, 52)

5 ▶▶ FF button (42, 52)

6 ● REC button (45, 60)

7 ■ STOP button (42)

8 ❚❚ PAUSE button (42, 60)

9 CHANNEL/TRACKING +/– buttons (45, 52, 57)

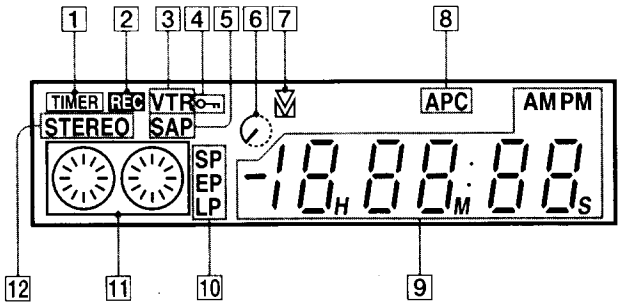
10 EASY SET UP button (11, 14, 17, 20, 23, 25)

11 Remote sensor (5)

12 LINE-2 IN VIDEO/AUDIO L/R jacks (59)

13 ⏏ EJECT button (42)

Display window



1 TIMER indicator (48, 51)

2 REC (recording) indicator

3 VTR indicator (46)

4 ⊶ (Child Lock) indicator (49)

5 SAP indicator (55)

6 Remaining time indicator (45)

7 ⊠ (tracking) indicator (57)

8 APC indicator (57)

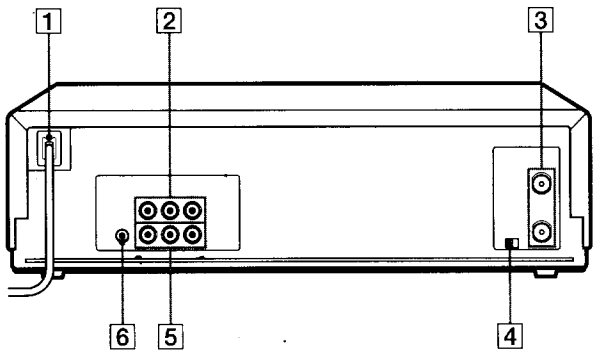
9 Time counter / clock / line / channel indicator (43, 45)

10 Tape speed indicator (45)

11 Tape indicator

12 STEREO indicator (55)

Rear panel



1 AC power cord

2 LINE-1 IN AUDIO L / R / VIDEO jacks (22, 59)

3 VHF / UHF IN / OUT connectors (10, 13, 16, 19, 22, 24)

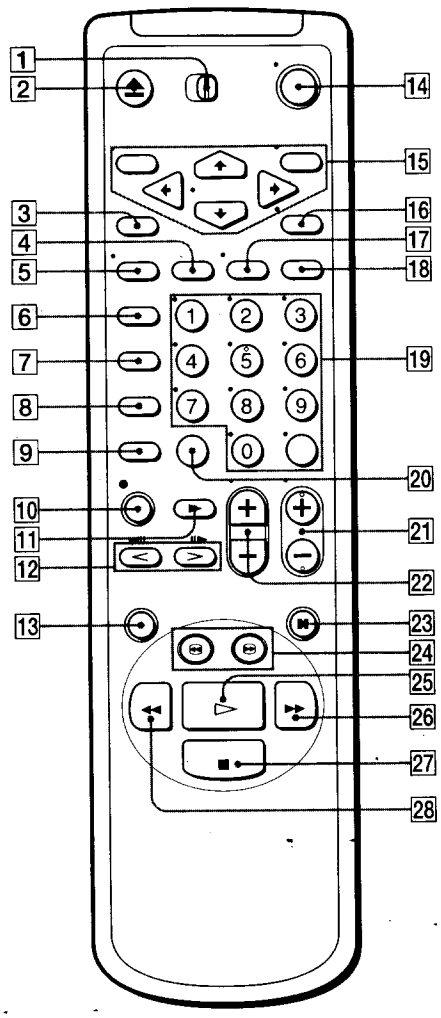
4 RF UNIT switch (61)

5 LINE OUT AUDIO L / R / VIDEO jacks (8)

6 CABLE BOX CONTROL CTRL S OUT jack (10, 22)

continued

Remote commander



1 TV/VTR remote control switch (5)
2 ⏏ EJECT button (43)
3 COUNTER/REMAIN button (44)
4 COUNTER RESET button (43)
5 DISPLAY button (45)
6 TIMER CLEAR button (48, 54)
7 QUICK TIMER button (53)
8 INPUT SELECT button (46, 51, 60)
9 TAPE SPEED button (45, 48)
10 ● REC button (45, 61)
11 ▮► SLOW button (52)
12 ◄▮▮/▮▮►FRAME < / > buttons (52)
13 SMART CUE button (43)
14 POWER switch (48)
15 Menu operation buttons (17)
MENU button
CURSOR ↑/↓/←/→ buttons
EXECUTE button
16 AUDIO MONITOR button (55)
17 TV/VTR button (6, 35, 61)
18 VCR Plus+ button (47)
19 Number buttons and ENTER button (37, 40, 48)
20 SET button (48)
21 CH +/– buttons (37, 45)
22 VOL +/– buttons
23 ▮▮ PAUSE button (42, 52)
24 ⏮/⏭SEARCH buttons (43, 52)
25 ▷ PLAY button (42, 52)
26 ▶▶ FF button (42, 52)
27 ■ STOP button (42)
28 ◀◀ REW button (42, 52)

Index

A, B

Accessories supplied 4
Adjusting
  picture 38, 52, 57
  tracking 52, 57
AFT (Auto Fine Tuning) 38
Antenna hookup 16
APC (Adaptive Picture Control) 57
Audio track 56
Audio/video (A/V) hookup 8

C

Cable box control
  cable box code number chart 31
  setting 30
Cable hookup 10
Cable mouse 33
Canceling timer settings 54
Changing timer settings 54
Channel line-up chart 39
Child Lock 49
Cleaning the video heads 63
Clock setting 29
Connecting
  cable TV 10
  external antenna connector 62
  UHF/VHF band mixer 62
Counter 43

D

Disabling channels 37
DSS (Digital Satellite System) 30
Dubbing. *See* Editing.

E, F, G

Easy Set Up 11, 14, 17, 20, 23, 25
Editing 59
EP mode 45

H, I, J, K

Hi-fi audio track 56

L

Language selecting 28
Locking the VCR 49
LP mode 43, 52

M

Monitoring audio 55

N, O

Normal audio track 56

P

Picture adjustment. *See* Adjusting.
Playback 42
  at various speeds 52
  frame-by-frame 52
  skip 43
  slow motion 52
Presetting channels 35

Q

Quick timer 53

R

Recording 44
  bilingual programs 55
  SAP broadcasts 55
  saving 46
  stereo broadcasts 55
  using VCR Plus+ 47
  while watching another program 46

S

Safety tab 46
SAP (Second Audio Program) 55
Searching at various speeds 52
SP mode 45

T, U

Timer recording 50
  cancelling timer settings 54
  changing timer settings 54
  checking timer settings 54
  daily/weekly recording 51
  overlapping timer recordings 54
  using VCR Plus+ 47
Tracking adjustment. *See* Adjusting.

V, W, X, Y, Z

VCR Plus+ 47
  channel setup 30
  recording 47

Quick reference to using the VCR

Hookup 1

To play a tape

1 Set the TV to channel 3 or 4 (or to video input, if you made A/V connections.)
2 Insert a tape and press PLAY.

To record a program

1 Turn on the cable box.
2 Press VCR Plus+ on the remote commander.
3 Enter the program's PlusCode number.
4 Select ONCE, DAILY, or WEEKLY, then press SET.
5 Insert a tape.
6 Press POWER to turn off the VCR.
7 Leave the cable box on.

To watch TV

1 Turn off your VCR, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
2 Turn on your cable box.
3 Set the TV to the cable box output channel (usually 2, 3, or 4).
4 Set the cable box to the channel you want to watch.

Hookup 2

To play a tape

1 If you made A/V connections, set the TV to video input.
If you didn't use A/V hookup:
- Turn on the cable box.
- Set the cable box to channel 3 or 4.
- Set the TV to the output channel of the cable box (usually 2, 3 or 4).

2 Insert a tape and press PLAY.

To record a program

1 Press VCR Plus+ on the remote commander.
2 Enter the program's PlusCode number.
3 Select ONCE, DAILY, or WEEKLY, then press SET.
4 Insert a tape.
5 Press POWER to turn off the VCR.

To watch TV

1 Turn off your VCR, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
2 Select the channel with your cable box (if you have one) or with your TV.

Hookup 3

To play a tape

1 Set the TV to channel 3 or 4 (or to video input, if you made A/V connections.)
2 Insert a tape and press PLAY. If there's no picture on your TV, press the VCR's TV/VTR button until the VTR indicator comes on in the display window.

To record a program

1 Press VCR Plus+ on the remote commander.
2 Enter the program's PlusCode number.
3 Select ONCE, DAILY, or WEEKLY, then press SET.
4 Insert a tape.
5 Press POWER to turn off the VCR.

To watch TV

1 Turn off the VCR, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
2 Set the TV to the channel you want to watch.

Hookup 4

To play a tape

1 Set the TV to channel 3 or 4 (or to video input, if you made A/V connections.)
2 Insert a tape and press PLAY.

To record a program

1 Turn on the cable box.
2 Set the cable box to the channel you want to record.
3 Press VCR Plus+ on the remote commander.
4 Enter the program's PlusCode number.
5 Select ONCE, DAILY, or WEEKLY, then press SET.
6 Insert a tape.
7 Press POWER to turn off the VCR.
8 Leave the cable box on.

To watch TV

1 Turn off your VCR, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
2 Turn on your cable box.
3 Set the TV to the cable box output channel (usually 2, 3, or 4).
4 Set the cable box to the channel you want to watch.

If you have any questions about this product, you may call: **Sony Customer Information Center** 1-800-222-SONY (7669) or write to: **Sony Customer Information Center** Sony Drive, Mail Drop #T1-11, Park Ridge, NJ 07656

Sony Corporation Printed in Malaysia